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TRADE-MARK

The Practical Magazine of
EFFICIENT MANAGEMENT

For Efficiency Men and Executives

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The Practical Magazine of
EFFICIENT MANAGEMENT

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THE EFFICIENCY COMPANY
72 W. Adams Street CHICAGO
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Official Organ of the Western Efficiency Society and the International Efficiency Society

STARTING SCIENTIFIC MANAGEMENT

H. K. HATHAWAY

Tabor Mfg. Co., Philadelphia

THE success attained in the introduction of scientific management, and its development in connection with any industry, depends upon the spirit in which the subject is approached rather more than upon anything else. Scientific management, in some respects, is like certain medicines, which, unless taken in proper doses, produce dire results or none at all.

We know many managers and proprietors who assume a greater knowledge of the subject than they are really warranted in doing. We still find men who interpret scientific management as some special wage or cost system. They mistake the form for the substance, and attach undue importance to the implements and various other things that constitute it.

To succeed we must not undertake to change from the old to the new style of management without sufficient knowledge and preparation; we must never underestimate the magnitude of the task; we must take the various steps in their proper sequence; we must not attempt to



progress too rapidly; we must have determination and perseverance, and remember always that so-called "short cuts" are generally ill-considered improvements on what has been proved the right way to do things.

Fairly illustrative of our conception of the proper spirit in which to approach scientific management is the case of two concerns located within fifteen miles of each other. One of them had a machine shop employing about 500 men. The employes of the other numbered between 300 and 400.

It was decided by the directors of the first plant that they wanted scientific management. The same desire came to the directors of the second plant. The difference was in the way they went about it. In the first they took great care in the preparation of the ground; to see that the men had the proper training to do the work and undertook to do it in the way it was laid out for them. The result was that within a year that concern had a complete system for scientific operation.

In the other plant, every proposition produced opposition. When a thing was laid out to be done, foremen, superintendents and cost men knew better ways of doing it. When the plant was finally turned over to an organizer, he spent most of his time explaining why the way he wanted things done was the right way, and why some other ways was not as good. In about a year it was necessary to drop the scheme altogether.

Before starting to make any radical changes in the system of management, it is desirable, and for ultimate success in most cases necessary, that the directors and owners shall be made to understand, at least in a general way, what is involved in the change. They should be informed of the leading objects which the new system aims at, such as rendering mutual the interests of employer and employe through "high wages and low labor cost;" the gradual selection and development of a body of first-class, picked workmen, who will work more effectively under the improved methods, receive extra high wages and be dealt with individually instead of in masses; and that this can only be accomplished through the adoption of precise and exact methods, and by having each small detail, both as to methods and appliances, carefully selected so as to be the best of its kind.

In other words, you cannot, so far as the workmen are concerned, cram scientific management down their



throats. It must be fed to them in proper quantities. Scientific management means a lot of hard work. Under it men are supposed to work hard and receive extra compensation for it. Most people lose sight of the fact, however, that those on the management side must also work a great deal harder than before. They must assume far more responsibility. It must be realized by those at the head of a business that they are undertaking no easy task, nor is it one that can be accomplished in a few days, weeks or months. A foundation must be built before erecting the structure and it may be safely stated that no results of any consequence can be expected for at least a year, and more frequently two years, or even three.

We are agreed, then, that the management must first convince itself that it wants scientific management; that it is the right thing for each member of the organization, from the directors down to the workmen. In order to be so convinced they should visit other plants where the system has been applied, and there see the effects on the men and the business.* As far as possible the foremen should also be permitted to visit other plants operating under the new style of management.

Such visits should be supplemented by a thorough explanation of the system. If, by such an educational movement, the men are convinced that the new form of management will benefit them, you will have their support. Unless there is a receptive mood to the undertaking, progress will be difficult.

The superintendent and the foremen must be made to feel that the adoption of the new type of management implies no reflection on their ability and integrity. One of the greatest difficulties lies in this direction. The foreman who has been running a shop in his own way feels that it is an implied criticism of his ability. He feels that his authority and importance are curtailed by it.

You must prove to him that under the new system his importance is just as great if not greater and that his efforts are going to be twice as productive as they were before. He must be made to see that he will have the benefit of not only his own knowledge, but the assistance of a great many others in the planning department. In other words, the superintendents, foremen and sub-foremen must be made to feel that the installation of scientific management is a movement to make their efforts



more effective through systematic cooperation, and that the results are going to be beneficial to all concerned. Unless all do benefit, you will not have scientific management.

The management should beware of the self-styled expert, whose qualifications consist chiefly of a stock of cant phrases culled from the literature of scientific management, which he glibly quotes to prospective clients, offering to install a complete system in as many weeks or months as it would take years to do properly. The wave of interest that has swept over the country has brought out innumerable such "experts,"—frauds, pure and simple. There are others possessing that dangerous thing, a little knowledge, who honestly believe themselves qualified to systematize any industry under the sun.

On the other hand, any engineer who undertakes to direct the installation, or rather the development of a system of scientific management in the works of a company where the right mental attitude does not exist, courts trouble, failure and the ultimate enmity of his clients. There is no use, nor is there any satisfaction in doing this work for people unless they are enthusiastic, and their cooperation is assured.

It is impossible for a manager, as those who have tried it know, to make much headway with the development of a new scheme of management, and at the same time carry on his regular work of running the plant. Therefore, the next step, after creating the right atmosphere, is to secure the services of a competent management specialist to direct the work of reorganization.

However, let us not lose sight of the fact that no matter how well equipped this management specialist may be, he cannot be expected to do more than direct the work of developing the system, and train the men who are to do the work of putting it in running order and administering it when developed. These men should be selected from the existing force wherever possible. In case these men are not available in the organization, and it is found necessary to bring in new men, they should be directly in the employ of the company rather than in that of the systematizer. This is almost imperative if the work done is to be of a permanent character. If new men must be brought in, it should be done some time before the active development of the system is started,



so that they will have ample time to become familiar with the plant and its output, and acquainted with the other employes.

At all events, a leader is one outsider you must have unless you can have someone in the organization take one or two years off and go into a plant where the system exists and there thoroughly learn it. You might take one of your own men who had no experience and yet knew your particular business, and give him the opportunity to study scientific management. In this case, however, he might make very serious mistakes in applying it. It is not generally advisable to bring in a large force from the outside. The work of inaugurating scientific management can best be done by those in the organization, guided by some one who has had experience.

Once it is decided to adopt scientific management, there can be no half-way course. Many good things fail by being put in on trial; and being a trial proposition only, it stands little chance to succeed. There must be a determination to make it go, and if at first it fails at any point, no one must be permitted to supinely say: "We tried it, but it did not work." Then is the time to go at it with renewed vigor, backed by unwavering faith. Failures of any sort are not due so much to the obstacles encountered as to the lack of determination to overcome them.

Before the National Machine Tool Builders' Association convention held at Worcester, Mass., last month, J. C. Spence, superintendent of the Norton Grinding Co., told of the Norton system of securing cooperation between the management and foremen of departments. The plan is one whereby the foremen are virtually put into business for themselves, i. e., they are shouldered with responsibility of knowing what it costs to run their departments and keeping that cost down. They are familiar, not only with net labor costs, but the cost of materials, the approximate shop burden, etc.

Cooperation of the foremen, as well as all others in the organization, is assuredly one of the paramount features of scientific management. However, scientific management does not look with favor upon such a scheme that is not supervised by the betterment department. The tendency of foremen would seem to be to economize at the expense of upkeep.



RECORD CROWD HEARS BARTH ON "SPEEDS AND FEEDS"

CARL G. BARTH, one of the most prominent among industrial engineers, attracted a record crowd to the regular meeting of the Western Efficiency Society held in the Green Room of the Annex, Chicago, Friday evening, April 24, when he spoke on "Speeds and Feeds of Machines." Lantern slides, which Mr. Barth used to illustrate his talk, added greatly to the enjoyment of the occasion.

Mr. Barth placed the United States fifty years behind England in the standardization of equipment, and lamented the fact that while a great many concerns spend large amounts of money for the maintenance of welfare departments, they fail to recognize what, to him, seems more important—the standardizing of machines. He did not, however, deny the necessity of promoting the welfare of the workman.

It was brought out clearly by Mr. Barth that in standardizing the work of a machine shop, careful calculations are made of the correct speed and cut for the various tools, but the changes of speeds on existing machines are so irregular in the same machine as well as in those of the same make that it is impossible to secure the required speed even though the exact needs are known. Mr. Barth has worked out a range of speeds which he applies to all machines of a shop, so that the standard instructions for work apply whether the work be done upon a regular machine or upon a substitute or even a different model.

This evolution has been secured by Mr. Barth through the adoption of a geometrical ratio of whatever size meets the requirements, and any speed of the machine multiplied by this ratio gives the next higher speed, while any speed divided by this ratio gives the next lower speed. The machine must be designed for this system, or, if in use, it must be redesigned to fit the system, and in this work Mr. Barth has devoted his life, during which time he has worked out all the necessary tables for all the elements concerned and has constructed slide rules for the rapid determination of any of the elements by using the known elements.



Mr. Barth very generously admits the failure of his tables and rules in the hands of those whose machines are not standardized as to speeds and feeds, for no matter, said Mr. Barth, how correct the data, if the speeds of the machine are an unknown quantity, there is no certainty that one is following the guide even though trying to do so. Mr. Barth hopes to have his work recognized by the builders of machines, so that any intelligent mechanic may take his system and determine instantly the best speed and feed for the work in hand and then to know that his machine will exactly meet the figures laid down. When this time comes Mr. Barth hopes to realize upon some of his work by the sale of his rules.

The exact speed and feed of a machine, as secured by Mr. Barth's system, is deemed necessary by him as a means of arriving at an equitable piece-rate. He emphasized this point and presented concrete examples of injustice to men working by the side of those whose machines are properly standardized.

As explained by Mr. Barth the determination of correct speed and feed is simple enough when the vast amount of mathematical work has been finished so that the results may be used as the elements, but the work of securing those results would have overwhelmed one who lacked the vim and faith of Mr. Barth in his own ability, and the ever-present consciousness of the great importance of the task.

The meeting of May 8 was addressed by John G. Jones, general sales manager for the Alexander Hamilton Institute, New York. Mr. Jones spoke on "Humanizing the Organization," which will be outlined in a future number of 100%. The meeting was one of the most interesting the society has had, and one of the best attended.

Charles R. Stevenson, general manager of the National Veneer Products Co., Mishawaka, Ind., will speak on the subject of "Organization" at the meeting to be held May 22.

It has also been announced that on June 12 Joseph French Johnson, dean of the New York University School of Commerce, Accounts and Finance, New York, will speak on the currency question, having special reference to the conditions which brought about the creation of the federal reserve system.



STUDY OF MAIL HANDLING HAS BIG FUTURE

THE importance of paying close attention to the cost of handling mail, and grasping every opportunity to decrease it (which invariably means a corresponding increase in efficiency) has become so vital with concerns, especially the larger ones, that special studies have been started within the organizations, disclosing some convincing proof of what is possible along this line. There is yet much to be done, even in concerns where special studies have been inaugurated, and the future of the work holds big promise.

It is the little changes here and there, which, taken as a whole, produce an astounding saving on the year. Taken separately these measures of economy may not seem so important. In fact many have refused to recognize them on the plea that the saving would not be sufficient to warrant a different method, but of late the experiences of big business houses have done much to draw serious attention to this end of administrative expense.

We learn that Armour & Co., Chicago, has effected a saving of about \$5,000 per year on general letters to salesmen and branch managers. It cost the firm nothing to produce this saving. It meant no new equipment; it meant no radical change of any kind. It involved merely a different mailing schedule that not only saved \$5,000, but raised the efficiency of that particular correspondence.

The mimeographed copies of general information and instructions to salesmen and branch managers were mailed by Armour & Company at a cost of \$24 per day under the old system, counting one cent postage on letters going to 2,400 men. Sometimes the expense was even greater, as the letters were composed in the various departments and at one time were mailed in separate envelopes.

Today 2,400 envelopes, containing the general letters of all departments, go out twice a week—Wednesdays and Saturdays—and while some of them may be too heavy to carry under a one cent stamp, a conservative estimate places the saving thus accomplished at \$5,000. This does not include the saving in time usually spent

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How efficient handling of mail effects service to customers is aptly illustrated by a big mail order house that formerly circulated an order from one department to another. As each department head came into possession of the order, he dictated whatever information he had to give on it, and by the time it was returned to the general salesman it was at least twenty-four hours later than it should have been.

So many complaints came in from customers who were seriously inconvenienced through the loss of that day, that the heads of the firm began a study of conditions. Dictating machines were purchased. The stenographic force was put to work each morning manifolding orders. These copies were distributed as fast as the manifolding was done, and as the copy came to the department head he dictated his information to a machine, and the stenographers transcribed that information in the afternoon.

What this simple little change meant to that firm was not summed up in dollars and cents, although some effort was made to show the saving in the time of stenographers and department heads, and while no actual figures were arrived at, the saving was estimated in terms of many thousands for each year. In addition, there was the customer and service to him to consider, which alone was more than enough to demand the new method.

Many firms have yet to adopt the "window" envelope, which Armour & Co. finds costs between 50 and 60 cents more per thousand, but the increased cost is more than made up by the saving in time ordinarily spent in addressing the envelopes, comparing the addresses on the letters and on the envelopes, to say nothing of the loss sometimes produced when the wrong letter is inserted.

Efficiency in mail handling, just as efficiency in manufacturing, does not necessarily mean the outlay of a great amount of money. Frequently it means the purchase of new equipment that will pay for itself many times over before finally going into the discard. In this connection students of mail cost do not overlook the fact that the individuals replaced by machines are thus allowed to concentrate on more productive work, which, in its turn, has a stimulating effect upon them and upon the entire organization.

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INTERNATIONAL SOCIETY PROMOTES CO-OPERATION

BEFORE a recent meeting of the Western Efficiency Society, Chicago, John G. Jones, general sales manager of the Alexander Hamilton Institute, New York, made this statement: "Business men, a few years back, were fond of doing things and keeping them a secret. In the last few years business men throughout the country have come to realize that the only way to attain efficiency in their organization is by getting hold of other business men and exchanging experiences."

This is a good summing up of the work that is being done by the International Efficiency Society—a movement that was started last Fall for the purpose of providing a clearing house for the ideas, suggestions and experiences of business that were going to waste for want of some medium through which to circulate them.

Since its foundation, the International Efficiency Society has paved the way for the formation of societies in many cities throughout the country, and by including in its ranks the individual who is not located where society membership is available, has actually succeeded in bringing business men in closer touch with each other than ever before.

The society is composed of practical and successful business men engaged in executive capacities in many of the largest industries in this and other countries. The primary motive was to get the business men of each city together that they might by personal contact learn of the better methods in use. Not to lose sight of the fact, however, that many men are so situated that it would be obviously impossible to get a sufficient number of men together to form a society, the membership at large was thrown open, and the growth of this has been as gratifying as the society membership.

Individual membership at a total cost of five dollars a year, with no initiation fee, secures a maximum service that can be rendered for that amount, including the monthly official organ of the society, as many printed speeches delivered before the affiliated societies as it is possible to print, and the upkeep of and reference to the records in the central office at Chicago.

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The International Efficiency Society, by reason of the work it is doing, requires men of high caliber in its membership. The chief requirement is a stated experience in management or practical efficiency work, and, if not themselves officers in responsible concerns, to show the approval of them as representatives by one of their superiors.

The work of building up the society, that its influence may become potent among business houses throughout the country, has been placed in the hands of an organization committee composed of executives and accredited representatives of their businesses. The chairman of this committee is Edward L. Ryerson, Jr., works manager, Joseph T. Ryerson & Son, Chicago. The members of this committee are forwarding the movement to the end that the needed co-operation between business men and houses will be forthcoming.

The last meeting until Fall was held by the Efficiency Society of Rochester Monday evening, May 4, when George D. Babcock, production manager of the H. H. Franklin Co., Syracuse, N. Y., delivered an address on "The Results of Applied Scientific Management." According to this system the management plans for and issues all orders in complete detail. The part assemblies are equalized by direct orders of the management, no stock chasers being employed. The system is so arranged that the responsibility rests entirely with the management. Dual responsibility is avoided. As a result, material shortages are small and infrequent, and part shortages are never serious; the employes are better trained and there is less avoidable absence from work. According to Mr. Babcock, the results of applied scientific management in the Franklin factory are represented by a marked increase in the rates of pay and a marked decrease in the cost of the product.

The meetings of the Efficiency Society of Rochester will be resumed in the Fall, and plans for increasing the already great interest in them are now going forward.

The Western Efficiency Society, Chicago, will hold meetings throughout the Summer on the usual second and fourth Friday evenings of each month. The meetings of last Summer were of uncommon interest, and it was thought inadvisable to cut the schedule down to even one per month.



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Department Editor, EDWARD L. RYERSON, JR.
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ERA OF CO-OPERATION

ORGANIZATION as the spirit of progress and co-operation as the means of increasing production and lowering prices is representative of an idea which is just now beginning to be developed and appreciated in its largest sense. With the rapid growth of factory system in the enlargement of industrial and commercial enterprises, we have seen the inevitable results of lack of organization—failure and disintegration. Such failures in organizations have been largely due to the intensity of competition and to the lack of co-operation, not alone within the organization but in the entire industrial field. Many such instances have resulted in reorganization on a basis of progressive co-operation, and have proven to be an economic success.

"We are living in an age of organization. Commercial and industrial enterprises, cities and men are thriving upon it. We are living in an age of organized interest. Men get together to discuss better conditions. They are doing it in a spirit of progress. Reciprocity, mutuality and co-operation are combined in this spirit, and the greatest of these is co-operation."

"There are two chief reasons for lack of co-operation: one is that men do not agree on what is best to be done. The other is that selfish motives deceive men into thinking that they can get more by going alone."

"Co-operation is the most effective way to secure the most of what each one desires to obtain."

The above paragraphs are the expressions of one business man of today, but a thought which is now becoming popular with all really successful men. The realization that ultimate success depends on efficient service rather than restrictive competition is making a great change in the industrial and commercial world, and we find a great tendency to replace competitive measures with co-operative mutuality.

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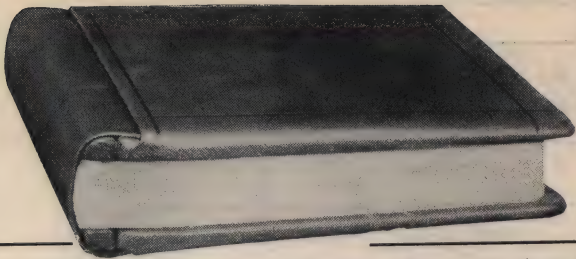
Efficient service means increased production and lower prices, and as long as population and civilization advances, there will be a continued demand for such service. With the advancement of civilization we must likewise have increased co-operation, in order to obtain the entire benefit of any field of activity and accomplish results efficiently. Co-operation, however, must be progressive rather than restrictive. There now exists a large amount of co-operation such as the latter and we, therefore, find some instances where production is controlled and prices are increased. This may be called restrictive co-operation, and results in inefficient service. Such co-operation or combination must be prohibited, and when eliminated we will find universal progressive co-operation existing.

Mr. Arthur Jerome Eddy has expressed many valuable ideas on co-operation and competition in his book, "The New Competition." His theory that no class can profit in the long run except as others prosper is a theory that is now being widely accepted and highly developed by the new spirit of business co-operation. Business science and the scientific management of industry is rapidly becoming a recognized profession through co-operative study. Manufacturers and business interests are developing this profession and interchanging ideas for the purpose of determining better and more efficient methods. Such co-operation never diminishes competition, nor does it retard prosperity, but always increases efficiency, makes for success and insures progress.

Schools and colleges are benefiting from this co-operation and are now educating men in business science and thereby better fitting them for the continuation of this study. The service rendered by men so educated rapidly increases in efficiency, and the organization in turn renders a better service to the field it serves.

Commerce is a fundamental requirement for the advancement of civilization, and when the commercial and industrial components of commerce co-operate through efficient organizations, civilization must advance more rapidly.

H. G. Prout has been elected president of the Union Switch & Signal Co., to fill the vacancy caused by the death of George Westinghouse. Sidney G. Johnson, formerly sales manager, has been elected vice president to succeed Mr. Prout.



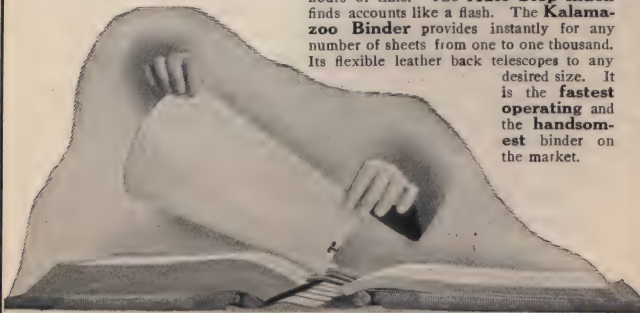
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ADMINISTRATIVE COST ACCOUNTING

Department Editor, H. THORPE KESSLER
Rosenwald & Weil, Chicago

*Accountancy should present with logical and mathematical
accuracy the true condition of affairs in any business enterprise.*

BALANCE SHEET CLASSIFICATION

TODAY business records and statistics are as essential to the operation of a well managed business as carefully selected tools are for efficient manufacturing. More attention is now being paid to accountancy owing to the rapidly rising labor and material costs. The importance of determining accurate costs is obviously responsible for this era of efficiency.

Keen competition demands more careful analysis of every operation to the end that reasonable returns may be realized. There are some very practical business men who bewail the value of good accounting, associating in their minds the idea that improved methods necessarily spell "red tape."

Successful systems must result in the eliminating of waste effort or material. In a series of articles which will follow, our efforts will be devoted to the analysis of the balance sheet, describing accounting methods used in the handling of various accounts. The discussion will take up the subjects in the order they appear in the balance sheet presented.

The various items appearing under the section of Assets and Liabilities should be grouped according to their activity in the business. Assets or Resources consist of:

Active Assets:

Cash bank balances.

Receivables: Accounts.

Notes.

Inventory of merchandise on hand.
(Available for prompt realization.)

Fixed Assets:

Real estate.

Buildings.

Machinery and fixtures.

Equipment.

Mortgages.

(Realizable at some future date.)

Pay Your Bookkeeper for His Brains—Then Use Them



Not the kind of brain work that is required to add "two and two." A machine can do that better and relieve your bookkeeper of this detail, so he can do more important things.

A Burroughs helps a man all day if he is handling figures. With it he carries on the office work as before, but he becomes distinctly more efficient in four ways, viz.:

The work is done in much less time—the work is done mechanically correct the first time—the bookkeeper takes more pride in his work and learns accurate short cuts—you (the manager) can quickly get viewpoints of your business from any kind of summary you wish.

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139 Burroughs Block, Detroit, Michigan



Passive or Speculative Assets:

- Good will.
- Patents.
- Copyrights.
- Franchises.
- Right of way.

Promotion Expense.

- Deferred charges to future operations.
(Uncertain as to proportion of realization.)

Active Assets so classified are the accounts which can be converted into bankable paper or cash the most quickly.

The Fixed Assets generally represent necessary investments or re-invested capital. Items under this heading are highly depreciative.

The Passive Assets are doubtful accounts, the value of which is problematical. Often the items include expense of a deferred nature, which will be charged out in the subsequent monthly quarter or other fiscal period.

Liabilities represent:

- Deferred payment.
- Indebtedness for assets.
- Investment in fixed assets.
- Created reserves.
- Undivided profits.
- Earned surplus.

Current Liabilities:

- Overdrafts at bank.
- Accounts payable.
- Notes payable.
- Interest payable or accrued.
- Accrued wages.

Fixed Liabilities:

- Bonded indebtedness.

Capital Accounts:

- Capital stock.
- Surplus.
- Reserves for accrued and unpaid expenses.
- Depreciation of buildings, etc.
- Unpaid dividends.

THE installation of a Comptometer represents the truest kind of efficient economy—the kind that actually saves time and labor and prevents mistakes.

The saving of time and labor due to the phenomenal speed of the Comptometer can be readily measured, but the value of its accuracy is simply incalculable. For instance—

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It was a further revelation when the Comptometer disclosed figure errors which had resulted in overpay-

ment on purchase invoices amounting to over \$500.00—invoices which had been gone over and checked by three capable mental extenders.

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These are real experiences—not imaginary cases. They can be multiplied by the thousand to prove beyond the shadow of a doubt that the Comptometer is one of the most notable factors for efficiency and economy in accounting that is known to the business world today.

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OPERATING COST ACCOUNTING

Department Editor, IRVING A. BERNDT
Manager Betterment Department Jos. T. Ryerson & Son, Chicago

*The proper derivation and distribution of operating
expense—labor, material, machine, overhead.*

INDIRECT MATERIAL COST

IN approaching the discussion of the collection and distribution of indirect material costs, we wish to emphasize that this particular expense is one which is probably most often and most easily overlooked and lost control of in the average organization. Furthermore, that reduction of this expense, in the majority of cases, has the advantage of being a net saving—a dollar earned for each dollar saved.

By indirect material we mean all materials which are purchased for the supervision, control and maintenance of the plant, buildings, equipment or commodity carried or manufactured, and which are of such nature that their period of use or usefulness is so short that it does not permit them to be chargeable as an asset or as an investment. In no case does this include materials held for sale, or upon which it is expected that profit be made.

Prices remaining the same, it would of course be most economical if such materials could be secured immediately from their source of supply as they are required, and in no more nor less than the exact quantity needed. This is impossible, and it becomes necessary to purchase in the majority of cases larger quantities than are necessary for immediate requirements to be held in reserve for future use.

Inasmuch as a large proportion of these materials constitute parts and supplies necessary for the prompt repair and renewal, as well as maintenance, of important equipment, it is all important to have such materials available for immediate use, and it is therefore found necessary to carry a more or less complete stock of such supplies and parts.

In the distribution of the cost of these purchases, much divergence is noted. In some cases the invoices for this material are charged to the general merchandise account,

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makes possible these statements from users: "Able to accomplish in three or four days, work which previously took **two weeks** to compile"—Aetna Powder Co. of Chicago. "We would estimate the saving in labor is that the machine will handle the work in one-fifth to one-half the time formerly required, depending on the character of the work"—Armour Grain Co., Chicago, Ill.

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and no distinction is made between it and that merchandise which is sold for profit. Sometimes no further distribution is made, and it is expected that the direct materials absorb the cost of the indirect in this way. It is obvious that in this manner the cost of such material cannot be studied or analyzed, and control of it becomes difficult. Where further distribution is arranged for, it is often still difficult to study these costs inasmuch as the shrinkage and unaccounted for amounts, due to obsolescence, errors in store keeping, etc., are not brought up separate from other direct materials for attention, and therefore are overlooked and incorrectly disposed of.

In other cases it is attempted by arbitrary distribution to charge each invoice for indirect materials to the operating and expense accounts chargeable as they are paid. Such distributions must be left to the judgment of one who supposedly has much experience and knowledge of past performances, and the various uses of this material. This is seldom, if ever, accurate, and further, the various departments and accounts are charged with this material cost as it is bought and paid for without any reference to when it is used, which makes comparisons almost impossible. Under such circumstances it is usually found that the superintendents or executives to whose departments such invoices are charged, object strenuously to the purchase of more material than is necessary for immediate demands, however economical and advantageous it may be to do so, since this increases their costs beyond all proportion.

Possibly the most satisfactory method for all purposes is to provide an account distinct from all others to which such invoices may be charged until the material is used. Such account may be termed maintenance supplies, tools and supplies, supplies or any other terminology which might be considered most descriptive. The materials should of course be stored in proper store rooms, either together or separate from the stock of direct materials, preferably the latter, and stock records of the most approved kind kept of each item, showing complete description, amounts, high and low limits, prices, etc. Where this stock is not so extensive it is, of course, possible to modify the methods in proportion to requirements by placing materials of this kind under lock and key in charge of department foreman, who keeps necessary records of stock.

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The withdrawal of this material should be done only through a supply requisition form, distinctive from all other material requisitions, arranged so that but one item appears on each requisition, offering advantages which we will return to later. These requisitions should be issued and signed only by those authorized to do so, and honored only when this is done. This requisition should also show the name or number of the department, workman and machine to whom and for which it was issued and also the account chargeable, by suggestive or mnemonic symbols where possible.

This supply requisition should be used to check off the issuance of the material it covers on the stock records. Here we come to the first advantage of the one item, requisition, especially if lot numbers are used in the usual manner for describing stock, since by sorting them according to the item or this lot number, the record of stock issues can be quickly and accurately taken.

When priced, this supply requisition becomes the charge against the various accounts on the cost statement, and for this purpose should be recorded and filed in such manner that information may be secured at any desired periods, and so that at the end of the month a total distribution statement for the month may be drawn off, showing the amounts chargeable to the various accounts, which are used to credit the book account, maintenance supplies, or whatever it may be termed.

Interest on the investment represented by the amount of this stock, also the cost of storing and handling this material, such as rent, storekeepers' wages, etc., may be charged to this account, and in making the monthly distribution statement, the total of such items should be distributed against the various items shown thereon in direct proportion to their several costs, as a burden.

In classifying these expenses for use on cost statements we find four general divisions:

1. Supervision—to which all such materials may be charged as are used for administration or supervision of the department or plant, such as stationery, etc.

2. Heat, light and power—to which all such materials that are necessary for the repairs, renewals, upkeep and maintenance of equipment used to furnish heat, light or power, are charged.

3. Maintenance—to which all such materials should be charged as are necessary for the repairs, renewals,



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upkeep and maintenance of machinery, tools, and equipment, such as repair parts, oil, waste, etc.

4. Rent—to which all such materials should be charged as are required for the repairs, renewals, upkeep or maintenance of buildings or grounds, such as new flooring, window panes, etc.

Further subdivisions may and should be provided to suit the local conditions, so that as definite as possible a study may be made of the use of this material. For instance, under maintenance, we may separate materials used for repairs and renewals, such as machine parts, etc., from that material used for the general maintenance of machines and equipment, such as oil, grease, waste, etc.

It is often found advantageous to provide supply requisitions in duplicate and triplicate so that they may be simultaneously filed according to accounts, men or machines, and commodities.

When filing under commodities and analyzing from this angle another advantage of the one item supply requisition will be noted.

The amounts of each commodity used are interesting, and an analysis of this might often prove beneficial.

In order to secure the co-operation of the workman in the reduction of indirect material costs, it will be necessary and advantageous to have definite and accurate knowledge as to the amounts used by each workman or gang, and for the various machines and equipment. It will be found interesting to note the effect of a statement if posted or circulated, showing the amounts of this material used by the various workmen, arranged so that the man who used the most heads the list and so down to the man using the least. In this way the gallon of oil or pound of grease develops into dollars and cents, and each withdrawal becomes a purchase to them for which they will later pay in the form of an increased amount on this statement.

It may also be found advantageous to send each foreman a copy of all supply requisitions, priced, covering the previous day's withdrawals. In other words, bill him for his previous day's purchases. He will often find innumerable ways of reducing these purchases.

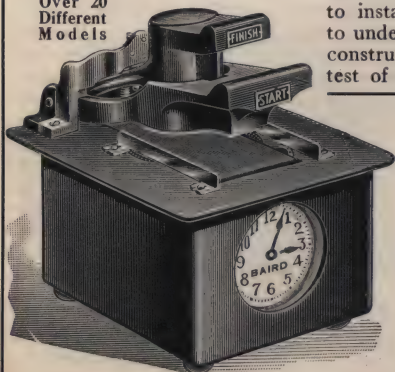
There is another point which is deemed most important in the purchasing of renewals of old stocks of indirect material and the addition of new stocks. That is the absolute necessity of complete control of such pur-

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chases by requiring the approval of the general superintendent, works manager or someone of equal ability and authority who may in this manner control this important point. Foremen are many times tempted to try new kinds, styles and sizes of materials and may do so before old stock is completely diminished. Much money may be wasted by obsolescence of such stocks or by carrying a stock of this material, in size and variety, altogether out of proportion with real requirements.

MONTHLY RULE NUMBER NINE.

Indirect materials are those which are purchased for the supervision, control and maintenance of the plant, buildings, equipment, or commodities, and which are of such nature that their period of use or usefulness does not permit them to be considered an asset or investment. They should be collected and recorded by departments, men, commodities, machines or equipment and for cost statement purposes by no less than four main classifications: 1. Supervision. 2. Heat, light and power. 3. Maintenance, and 4. Rent.

A most comprehensive study is that of "Factory Organization and Administration," written by Hugo Diemer, professor of industrial engineering, Pennsylvania State College. Professor Diemer begins at the very foundation of scientific management and its introduction into an industry, taking the reader, then, through such subjects as "industrial finance," "organization and control," "typical factory organizations," "factory accounts," "departmental reports," "factory location," "employment of labor and labor problems," and many others. For the man who is not convinced of the efficacy of scientific management, or for the man who believes in it but can find no safe way of installing it, we can heartily recommend this book. Its wide variety of comment, forms and facts will be intensely interesting to the scientific manager as well. (1.)

Henry Phipps has resigned from the board of directors and also as a member of the finance committee of the United States Steel Corporation. James A. Farrell, president of the corporation, takes the place of Mr. Phipps on the finance committee.

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MATERIAL *and* SUPPLIES

Department Editor, J. F. HENNING

Superintendent Dept. of Material and Supplies, Chicago Surface Lines, Chicago

*The efficient handling of finished stock and raw materials;
inventory and check on stores; requisitions, tests, etc.*

HANDLING OF SCRAP

ABOUT two years ago, it was reported that the United States government was aroused to the fact that the scrap taken from its battleships was being disposed of to a syndicate of New York junk dealers at a big loss. This syndicate, from year to year, had been buying up at auction all the scrap gathered from the nation's war vessels, and on its sale had realized an enormous profit. Whereupon it is reported that the government declined to sell any more scrap in this way, announcing that thereafter it would be repaired and once more put into use. The saving effected during the first year after the new order went forth was estimated at \$2,000,000.

What about your scrap? Is it given the same careful consideration that you give your new materials and supplies? If not, you are neglecting one of the most important items in the handling of stock.

We are all agreed that new material represents cash; that it should be guarded with the same care that prevails in the handling of money. It is no less important that you look after your scrap, sending it to the scrap yard where it should be carefully inspected by a competent man, who is thoroughly familiar with each article and its usages.

All repairable articles should be assorted to their proper bins, and at stated intervals be listed so that orders can be made to have them repaired. Before ordering new material it should be ascertained that no repairable is on hand, thus saving in the purchase and obtaining the full life of each article.

The salable scrap should be assorted by kinds and grades in order to get the highest market price. A list should be made at regular periods for the sale of scrap to be made by the purchasing department.

Some years ago a Chicago firm adopted a method of scrap handling that has proved itself very satisfactory



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Our new catalog tells all about it Write for it today.

The Berger Mfg. Co.
Canton, Ohio



and efficient, as well as profitable. A Scrap Sales department was organized to handle all obsolete and scrapped materials and supplies. Under the supervision of this department, all scrap was assorted, listed and sold, and at the end of the first year it was shown that the department had operated at a profit.

About six months ago, while walking along the tracks of one of the large railroads, approximately 2,500 pounds of scrap was observed in the right of way, such as brake beams, couplers, bolts, etc., about ninety per cent of which was repairable material. Some thirty days later, a second trip disclosed the fact that practically none of the scrap had been removed.

This material should have been collected daily by the section foreman on his trips from work, and taken to his section house, and from there sent to the storeroom at stated intervals for assorting and repairing, thereby saving many dollars for his company.

The above instances serve as an illustration of what can and should be done under efficient methods of scrap handling.

The details of scrap handling will be taken up in the June issue.

CORPORATION SCHOOLS

The annual convention of the National Association of Corporation Schools will be held in Philadelphia, June 9-12 inclusive. The Curtis Publishing Company will be the entertaining body.

Every important subject pertaining to efficient management and the welfare of employes will be taken up on stated days, the program including many of the recognized authorities on various topics. The program in full will be sent upon request from F. C. Henderschott, assistant secretary, New York Edison Co., New York.

A Federation of Benefit Funds for the purpose of exchanging ideas on benefits to workmen, bonus, profit-sharing, etc., is suggested in an article written by W. L. Chandler, of the Dodge Manufacturing Co., Mishawaka, Ind. (2.) Mr. Chandler has made an exhaustive research into the various benefit funds now in use, and in his article he summarizes in a very satisfactory manner.

What Constitutes 100% Efficiency in Steel Stockroom Equipment?

Is it merely the replacing of wood? Is it just the greater economy of space and time to be obtained from the use of steel over wood—the greater durability—the lessening of fire risks and losses—the knock-down feature—etc., etc.?

Of course, any ordinary steel shelving should and does embody these features to a certain extent, but would you, Mr. Efficiency Man, consider such equipment fully 100% efficient? Would you rush out and buy any old auto truck simply for the common advantages of a truck, or do you buy a tested truck of known standards because of the maximum service to be obtained along with the common advantages?

Just so in selecting your metal shelving. Too much can not be said in favor of giving particular attention to the *detail construction* of the shelving itself. Is it really *practical*—are the parts *fully standardized*? Will they permit of the greatest *flexibility* in meeting varying storage conditions in the future? Are the parts completely *interchangeable*?

These are the real salient and pertinent features which make for 100% efficiency in the stockroom. In fact, it is with shelving as with any other manufactured article—the more scientific the methods of manufacture, the larger the quantities in which it is produced and the closer it adheres to the highest standards of utility—established by years of practical experience, the greater is its efficiency and economy.

“Lyon” steel shelving and equipment, made by the Lyon Metallic Mfg. Co., Aurora, Illinois, conforms rigorously to these principles and is invariably adopted by all those who investigate for real efficiency. For further interesting information check postal at page 41, for Bulletin No. 301-B.

Lyon Metallic Manufacturing Co.

Aurora, Illinois

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Detroit

New York



LABOR

Department Editor, W. A. GRIEVES
Supervisor of Employment and Welfare, Jeffrey Mfg. Co., Columbus, Ohio

Shows what the relationship between the employer and employe is and should be. How scientific management improves that relationship.

EFFICIENT CO-OPERATION

THE establishing of efficiency in business management is nothing more than extending the idea of industrial education. Opposition to better methods always comes from two sources: First, those who are ignorant; and second, from those whose selfish interest is not best served by a larger intelligence on the part of those whom the selfish interest seeks to control.

Let the opponent of efficient management look about him. What was good enough for yesterday is not necessarily meeting the need of today. The scientist of today is not working by the same formulas he used twenty years ago. Doctors are not applying the principle of diagnosis used a generation since. The messenger afoot has given way to the telephone. The ox team is not to be desired to the smooth-running six-cylinder.

We recall the advent of the linotype a quarter of a century back. How we typos objected! Our bread and butter was threatened. Yet it was but another step along the road to more efficiency in the printing trade and a consequent gain in dollars to both employer and employe. Instead of causing a less demand for printers, the linotype has opened up a field of development in the printing industry that was unthought of before its invention, and the demand for high grade men in this line has never been greater.

In speaking of industrial education, we have been inclined to think of it in too restricted terms. We have thought of it as only applying to the learning of some particular phase of industry when it should include a knowledge of the fundamental principles of efficient co-operation. It is as much a part of industrial education to teach men to understand the value of efficient methods in production as it is to teach them the line of work they are best fitted for by reason of natural talents and inclination.

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in Hotel McAlpin, New York City



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Keep employes' personal effects clean, sanitary, safe and fireproof. Each locker is 12 x 18 x 72 inches.

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For example: To teach men to understand that a minimum wage may be a detriment instead of a benefit, is as much a part of correct industrial training as to emphasize the importance of proper vocational selection. The remedy for low wages is not so much the need of a minimum wage as it is the need of greater intensification along the lines of industrial efficiency. We are unable to see wherein a minimum wage would be of any permanent advantage to the worker in general. But we can readily understand how, through proper instruction, men could be led to see that increased industrial efficiency can be highly beneficial to all. The question of a minimum wage is one of earning power and what the worker is worth.

Even in this period of greater or less depression in the business world, there are few really capable men out of work. Those who are may be classed as the inefficient. And it will always be the inefficient and unskilled who will receive the low wage. The remedy is in broader training and more intelligent production. It has been said that the basis of the minimum wage must be determined by the cost of living. But if a minimum wage is to mean a "living wage," and wages are not to be determined by the worker's ability, skill and industry, but by the cost of his living, by what standard is that cost of living to be determined? The expense of the family varies just as the tastes of the individual vary. Education, social position, nationality, experience, and a host of other things help determine the standing of the individual, and hence the cost of his living.

A broader industrial intelligence is what is needed. The worker must be educated. Not necessarily in the text book curriculum, but in that wider sense of knowing that the greatest and most satisfactory results are obtainable only through the spirit of mutuality and a desire to obtain the highest efficiency possible.

Then, too, industrial education can be extended so that men will be led to see the plain fact that their interests are better conserved through co-operation with their employer than by fighting him. Education will teach the worker that the whole trend of thought among employers today is one of consideration for employees. It will help him to understand that public sentiment can be relied upon to promote the interests of the wage-earner, and that co-operation is the true spirit of our times.

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THE MAN This "Man Hunt" of yours, this quest for "Human Material" presents you with men too young, men too old, men who "think" they can—men who "have been"—good.

But that is not all.

THE JOB Think of your lost time—annoyance, expense and failure to reach the right man at that critical time when "each needs the other."

THE BOSS If we can work for Fairbanks-Morse Co., International Harvester Co., Universal Portland Cement Co., Parlin & Orendorff Co., Deere & Co., Whitman & Barnes, Aultman & Taylor, Hot Point Electric Co., Root & Van Dervoort, Sidney Steel Scraper Co., Wm. Graver and hundreds of others, both large and small—don't you think you can afford to turn your "Specifications" over to us? There is no charge to you—let's get acquainted.

A few people don't realize what we can do.

May we send you a list of available men for your openings? Just check the postal.

"It can be done."

Efficient Service Co., Inc.

R. E. PLUMBE
President

R. F. ANGELL
Treasurer

O. H. RASCHKE
Secretary

1340 Monadnock Block
Phone Harrison 6993

53 W. Jackson Boulevard
CHICAGO



WAGES

Methods of wage payment; how, when and where to pay and what to pay with. Pensions, profit-sharing, etc.

PROFIT-SHARING

EMPLOYERS of men are exerting themselves in the search for a practical, honest, profitable method of profit-sharing. They know that they must find the kind of partnership that will best suit the employe and the employer, and the best way of regulating and controlling this partnership.

The problem is to find such a form—a practical, honest, profitable method of profit-sharing. We must find the kind of partnership that will best suit the employe and the employer. We must also find the best way of regulating and controlling this partnership.

We must not be disillusioned by any claim to philanthropy that may be made by employers. Such claims are generally veiled in high-flown phrases, and they are of about as much value. There is no philanthropy in profit-sharing. There shouldn't be, and if there is it can generally, if not always, be classed as poor business. Furthermore, the profits must be real, otherwise the dangers will multiply. The concern that cannot safely estimate its volume of business; the concern that has a fluctuating market, or the concern that is not founded on a rock, would do better to evolve some other system of rewarding its workmen other than profit-sharing.

Once adopted, profit-sharing cannot safely be discontinued, any more than standards can be lowered. There may come a time to the unsteady concern, or the concern with a fluctuating market, when there are no profits. Then comes the trial. Once it becomes known that such a condition exists, the doors to credit are closed, and whatever chance the business had to survive is gone. If based on honesty, profit-sharing is a true index to a business. If it is not a true index, it is not a good profit-sharing plan, and will sooner or later prove a millstone to the business.

George W. Perkins, of New York, was recently quoted to this effect: "The basis of wages of each employe

Get a RAND



The OLD Card Index Replaced by the **NEW RAND Visible**

BUY it to save time! Buy it to save money!
Learn how your strongest competitors are using this remarkable invention to cut the increasing cost of office labor! See how the panels revolve on ball-bearings. A glance and you sweep 200 index cards with the eye. One second is now enough to find a card which formerly took from 30 to 60 seconds. **One** clerk can easily do the work of two and have plenty of time to spare.

The RAND is the **only** office machine carrying a factory guarantee for ten years. Every Business—Large or Small—Needs a RAND.

Ten Times Quicker Than the Old Card Index

Used by John Wanamaker, U. S. Government, National Shawmut Bank, Bell Telephone Co., Standard Oil Companies, American Woolen Co., and others.

So simple it's equally adapted to the small business, too. Will you accept free a book telling how to save time and money? Check the postal—yours by return mail.

THE RAND CO.

Dept. 5, No. Tonawanda, N. Y.

50 Union Square, New York City
 1229 Munsey Bldg., Baltimore, Md.
 76 W. Monroe St., Chicago, Ill.
 636 Liberty St., Pittsburgh, Pa.
 Clarke and Courts Bldg., Galveston, Tex.

234 Congress St., Boston
 32 Clay St., San Francisco, Cal.
 633-639 Euclid Ave., Cleveland, O.
 306-308 N. Fourth St., St. Louis, Mo.
 16 Board of Trade Bldg., Calgary, Can.

EFFICIENCY
 GUARANTEED
 INTERNATIONAL EFFICIENCY SOCIETY CHICAGO

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For further Information check Postal for page

47



should be his fair proportion of what is made in the business of which he is a part. To gain this cooperation there must be a showdown as to what the business is doing. There must be publicity and frankness, to the end that labor will know what the capital is doing and making.

"If this organization of men, brain workers and hand workers, should develop so high a type of efficiency that their efforts produce more profits for the concern than are necessary to meet all obligations, such profits would naturally go to the common stockholders; and at this point the organization of men who carry on the business should share with the common stockholders this extra profit earned.

"Profit-sharing should not be bonus-giving. It should not only give more equitable compensation, but should provide a means of saving which would mean many men having many dollars saved and to their credit, in place of three or four men in the same business having many dollars to their credit."

Right along this line we are interested in a statement recently made by T. K. Cory, vice president of the Filene Store, Boston. Mr. Cory said: "Perhaps the biggest problem, not alone in department stores, but in every walk of life, and which applies to every person, is this: People can never put the same grade of work in work they are doing for somebody else that they can in work they are doing for themselves. I believe that the sooner we make our business our employes' business, as well as our own, the nearer we are coming to that solution, and I believe that the best bonus system is the division of the profits, or division of net profits."

What benefits should result from practical profit-sharing? We do not pretend to touch on all of them, as the benefits will vary according to the nature of the business, but there are a few that can be called standard. Primarily it should improve relations between the employer and the employed; it should identify and unite their interests; make common their desires to push the business ahead to the end that there will be greater profits to share. It should reduce labor trouble to a minimum; it should create a feeling of contentment in the workmen; fan enthusiasm, and establish a heart-felt interest in both the quality and quantity of the plant's output.

Rand Overlapping Index

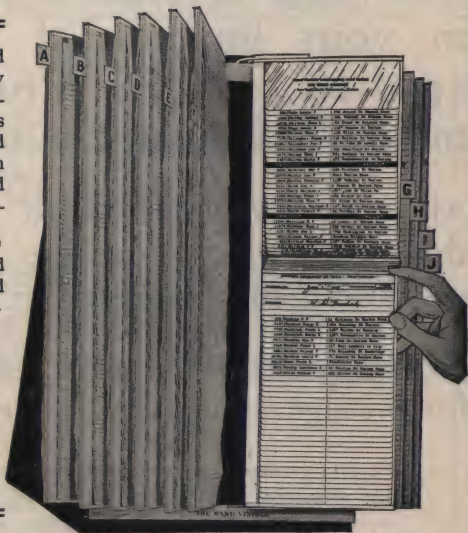
insures instant filing and finding and brings 200 cards before the eye at once.

Every user of a Filing Device can afford to discard his old-fashioned appliances and install a RAND. It means a tremendous saving in

Time— Money— Nerves—

Visibility and accessibility are the key-notes of this system and make location of card desired almost instantaneous.

Adopted and standardized by the Philadelphia Electric Company to displace 120,000 ordinary cards, which have been discontinued.



Stationary Desk Style—Black spaces show cards "out."

Check Postal Today For Free Hand Book And Learn By Signed Proofs

THE RAND COMPANY
NORTH TONAWANDA, N. Y.

New York
San Francisco

Boston
Cleveland

Baltimore
Pittsburgh

Chicago
St. Louis

Galveston
Calgary

4031-7 **EFFICIENCY**
GUARANTEED
INTERNAT'L. EFFICIENCY SOCIETY CHICAGO

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For further Information check Postal for page

49

This Prepaid Post Card Saves You Time ➡

You need to investigate devices, machines and systems that will increase efficiency in your business if properly applied. This Post Card makes it convenient to do so.

All you have to do is to check the things in which you are interested, sign and mail anywhere—it's stamped.

No wasted time dictating—no expense for postage, stationery or stenography.

Perhaps you want to know more about some article not advertised—simply note in the blank spaces and we will do our best to give you the information.

In using this post card you are protected by the double guarantee on page 99.

Use the Card—See Opposite Page

Do you want 100%
for next month free?

Simply vote for your favorite
departments on your postal, sign
and mail. No further obligation.

To make sure of every
issue for a year,

Just check page 51 on your postal.
We will bill you at \$2.00 in the
regular way, and what is more—

We will extend your
subscription one more
month for every card
you vote and mail.



EMPLOYMENT

Department Editor, DR. KATHERINE M. H. BLACKFORD
Employment Expert, New York, N. Y.

*Scientific methods of examining and employing
men and maintaining records of their location.*

APPLICATION BLANK

LAST month we discussed the first page of the application blank. Herein we consider the reverse side, on which are a series of questions which vary according to the character of the business and other circumstances.

As was stated last month, the answers to these questions are filled in by the applicant himself, provided the application is made by mail. In case of a personal interview, however, these questions serve as suggestions for inquiry by the interviewer. He may ask all of them, or some of them, or none of them.

In the interview, these questions are woven into a friendly and sympathetic conversation with the applicant. As far as possible every evidence of "third degree" or "grilling" is avoided. The endeavor of the interviewer is to give the applicant a feeling that he is being consulted as to his qualifications and the best way in which to state them.

The whole spirit of the employment department should be that of friendly helpfulness. Every applicant should be made to feel that those in authority in the department are just as eager to serve him as they are to serve the company, it being made abundantly clear that the only way to serve both the applicant and the company is to secure the right man for the right job under the right boss.

Just what questions the interviewer will put to the applicant will depend somewhat upon the kind of work he would be expected to do if employed, the standards and ideals of the house, and the observations made by the interviewer in his analysis of him.

It would be impracticable to outline here all of the inquiries which might be used in this interview, but a few will make clear their purpose and suggest others as well.

It is desirable to know whether the applicant reads, speaks or understands foreign languages and, if so, what

ANNOUNCING

==the==

**“CUTTING THE COST OF MAIL”
SERIES OF ADVERTISEMENTS**

=====

IN the following right-hand pages the makers of machines and methods for cutting the cost or increasing the efficiency of correspondence will clearly show efficiency men and all those interested in this important subject the latest and most approved ways in which lower cost is being obtained in hundreds of successful concerns.



they are. The merchant who has many foreigners among his patrons; the employer who has foreigners upon his payroll and needs foremen and executives who can handle them; the exporter, and others find this information valuable.

The health of the employe is a very important consideration. While an applicant's physical condition is largely revealed by his appearance, it is important to know how much time he has lost through sickness in previous years and the nature of these illnesses.

In many positions "the bird of passage" is an exceedingly undesirable asset. In discovering whether or not a man is a wanderer, it is not best to ask him the question point-blank. This same rule applies to almost all other questions. The best way is to ask some question that will bring out the information indirectly. If you ask a man if he changes his residence frequently, he may resent it or he may give you an untruthful answer, but if you ask him to give the names of places in which he has lived, he is quite likely to answer correctly.

It is absolutely necessary to learn in regard to many positions what education and training, both general and technical, the applicant has had. By getting a man to tell you what studies he liked best in school, and what studies least, you obtain valuable information regarding his aptitudes, and are thus able to add one more check upon your own observations in regard to him.

While it is by no means conclusive evidence of a man's aptitudes and talents, it is worth while to find out what kind of work he likes best and in what direction his ambition lies, what his ideals are and something of his purposes in life. Properly encouraged, most men will talk frankly about these things.

If the applicant is wanted for an executive position, either immediate or prospective, it is well to learn his own estimate of himself as an executive—how well he thinks he can handle others and what evidence of his success he can give.

Many other lines of inquiry will suggest themselves to an intelligent interviewer as he grows in knowledge of the work and in experience.

Whatever the questions, however, the interviewer must never lose sight of the fact that their purpose is to assist the applicant to reveal his worth, in order that he may obtain a job at the kind of work he likes best.

SAVE time in every department of your office by having the mail opened and distributed practically as soon as received.

Model H



Lightning Letter Openers

Hand and Power Models

Open the mail from ten to thirty times faster than it can be done by hand and will not cut enclosures, simply cut a thread from the folded edge of the envelope. All models open letters flat so that enclosures cannot fall out. Any boy or girl can run a Lightning satisfactorily.

Hundreds of Lightnings in busy offices have paid for themselves and are now declaring daily dividends. We can send you copies of very favorable letters from firms that you know demand "100% plus" from any equipment they buy.

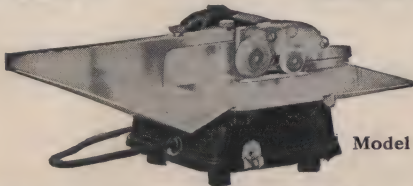
Write for details and tell us your average daily mail so that we can advise what model will pay you best.

Lightning Letter Opener Company

77 Exchange St., Rochester, N. Y.

CHICAGO OFFICE
410 Como Building
443 So. Dearborn St.

NEW YORK OFFICE
744 Marbridge Bldg.
Broadway and 34th St.



Model A-2



and does best and in which he will receive the highest pay.

No applicant should be compelled to write anything or to answer anything if he shows any disinclination to do so. Putting the man on the rack or prying into his personal and private affairs is not the object of the interview. These three ideals in employment should never be forgotten:

First, the employer's ideal—the right man in the right job under the right boss.

Second, the employee's ideal—to do the work he likes best and does best and for which he receives the highest pay.

Third, the cooperative or mutual ideal—to produce the largest quantity of the most efficient quality and at the highest profit commensurate with good service and permanent business building.

An interesting article on the difficulties of a sliding scale of charges, and showing when unearned burden should be carried into the cost of factory product, is offered by Sterling H. Bunnell. Mr. Bunnell does not share the view that expense must be extinguished as soon as possible and that unearned burden should be promptly dumped over the general product by an increase in the rates. (10)

The value of studying methods used in other plants and so changing them as to make them applicable to your own business, forms the basis of an article entitled "Scouting for New Methods," by Gordon Reynolds. A general analysis of what a methods department should do, and of what it should consist, is included. (11)

How the Sherman anti-trust law will influence combinations of manufacturers engaged in export trade is the subject of an article by James A. Farrell, president of the United States Steel Corporation. Mr. Farrell is one of the country's greatest export students, and shippers will find his comments well worth while. (6)

Melville W. Mix, president of the Dodge Mfg. Co., Mishawaka, Ind., takes up the individual as a power plant, and discusses him from a highly practical standpoint. (12) The wear and care of physical power is scientifically discussed.



The above picture shows three special American Perforating Machines made for Sprague, Warner & Co., Chicago. These machines are of the very latest type, are motor driven and equipped with our new invention, an automatic clutch (Patent applied for), supplied with special timing gears.

With these three machines it is possible to number and date **ONE MILLION LABELS EVERY NINE HOURS.**

The dies of these machines are the same as furnished in our standard perforators, are made by our double lifter process (Patented Sept. 26, 1911), are of special steel and hardened in special furnaces.

Wheels for changing numbers and dates are steel and are made under a recent invention (Patent applied for).

When orders, bills or other papers are drawn in two or more copies, they should be numbered with our motor driven automatic consecutive numbering machine.

The American Perforator Co.

ALFRED L. DAY, President

631 West Jackson Boulevard

CHICAGO



DESPATCHING

Department Editor, HOWARD B. STONE
Chicago

Planning and routing work through the factory, warehouse and office.

PLANNING DEPARTMENT

THERE are many and varied ideas as to the make-up and duties of a planning department under efficient management. Few of them are sufficiently comprehensive.

The planning department is composed chiefly of men handling the various clerical and semi-engineering operations which previously took place (or should have taken place) in preparing the order for the shop, and in supervising it while there. These include the so-called order clerk, who separates the customers' orders into the proper sections for use in the shop, and prepares the shop orders; the stores record clerk, who ascertains the availability of material for the order; the list of material clerk, who lists the material and parts necessary for the order, and the despatcher.

Some industries require specially arranged planning departments to meet the demand of local conditions.

The safest rule is to have a central planning department for all such manufacturing as is composed of interdependent or sequential operations. When operations cease to be interdependent, it is usually more efficient to separate the department, or at least portions of it, so that only directly connected operations are under one despatching head.

The exact division must suit the particular conditions evolved. You will doubtless recognize, in preparing an order for the shop, that many of the operations, assigned to the planning department, have been considered part of the work of some other clerk in the general office. They are merely centralized in the planning department to facilitate their handling and increase their efficiency.

The customer's order should be received in the planning department with the approval of the credit and sales departments, all questions of the customer's standing having been settled before the order is allowed to start toward the operating departments.

The Successful Salesman

of TODAY IS A STUDENT
of HUMAN NATURE

HE can't afford to depend solely upon his personal acquaintanceship. He must be resourceful, convincing, diplomatic.

The Salesman can easily overcome a negative feature of his appearance or presentation after gaining an audience, but what chance has a letter to do this?

Study your business stationery as you do your salesman. Select the paper with a definite object in mind.

If you want your stationery to emphasize the character of your merchandise or service, choose that paper which will express it best.

The more analytical you are, the better you'll like BROTHER JONATHAN BOND. This paper surely has the true ring of quality—the appearance of frank sincerity which good business men admire.

Brother Jonathan Bond

"AN EXHIBIT"

Gratis



Have you a copy of this book? Get it and know Brother Jonathan Bond. You'll never regret the move. Tell your printer to use this Paper next time.

J. W. BUTLER PAPER COMPANY

Established 1844

CHICAGO



The order clerk, on receipt of the original order, should separate it into its proper parts according to the nature of the work to be done. It should then be written up and three or four copies made.

The list of material clerk should then receive the order and compile a list of all materials and parts necessary for the manufacture of the articles.

From the list of material clerk the order travels to the stores record clerk, who should note whether or not the material called for is in stock. He should arrange for each item, either reserving it in stores, ordering it made in the shop or drawing a requisition on the purchasing department. The presence of each item of material when needed is thus assured.

The order goes next to the despatcher, who should determine the operations necessary in the manufacture of the order and assign them to men and machines. He should also determine from the schedules for these operations the method of performing them, the speed and feeds to use, the depths of cuts for cutting tools, and the standard time.

The order will then be ready to go into the shop, and at the time designated by the despatcher in his working schedule, one copy of the order should be sent to the shop with the standard instructions for the operations to be performed.

The despatching of materials to the machine or to the department has already been considered in this department. The handling of the order in the shop will be the subject of this department contained in the June issue of 100%.

How to set a schedule for the factory is the basis of an interesting article appearing in *Industrial Engineering*. The article goes on to prove that by a careful analysis of each order, and definite planning of the method of operation, a factory can keep 98% of its delivery dates. (3)

A worth-while article on advertising is that appearing in *Business Education*, and written by Harry Tipper, advertising manager of The Texas Co. (4) Mr. Tipper considers judicious advertising and its effect upon the sales organization.

Order Your Business Stationery on
CONSTRUCTION

White - eight colors
Three finishes



Envelopes
to Match

BOND

Nationally known as the paper that makes
Impressive Stationery at a Usable Price

Sold only in case lots direct to the most competent and responsible printers, lithographers and manufacturing stationers in the 180 principal cities of the United States and Canada. When you specify and secure Construction Bond you are not only assured the highest bond paper value obtainable at the price, but you are also sure of high grade work upon it.

Write us on your business stationery for the names of concerns in your locality who can furnish fine stationery on Construction Bond and we will also send you handsome specimen letterheads showing the various colors, finishes and thicknesses of Construction Bond.

W.E.Wroe & Company, Sales Offices 1006 South Michigan Avenue. Chicago



TIME *and* MOTION STUDY

Department Editor, F. A. CARLISLE
Efficiency Engineer, Western Electric Company, Chicago

*Shows the value of timing and studying the motions
of men; how to begin studies and how to make them, etc.*

THE FAST AND THE SLOW MAN

WHAT manager of men has not looked out of his office window during the noon hour, watched his men playing ball or indulging in other relaxation, and sadly noted the vast difference in energy displayed as compared with the lethargy conspicuously present before the whistle blew? And the greatest marvel of all is that those who are slowest in the shop are frequently the leaders in sport.

While the reasonable manager has no desire to speed his men beyond a normal limit of activity, yet he would welcome some scheme by which the laggards might be enthused and the old, old problem of the fast man and the slow man be solved.

We will readily admit that some men are much slower in their movements than others, but we believe that the cause lies much deeper than what might be termed constitutional slowness, and that there would be comparatively little difference between the output of the fast man and the slow man were the conditions under which they operate carefully analyzed and adjusted to suit their individual requirements. As yet there has been little real investigation along this line.

Undoubtedly the man's mental attitude toward his job is one of the things of greatest importance governing his output. Though changing industrial conditions have made necessary different methods of handling the work in most places, it is unfortunate that we cannot go back to the days of our fathers when the workmen evolved from the raw material, through its successive operations, the finished product. We have lost the spur of the creative instinct that made the craftsman of other days pride himself as a master of his trade.

The day of the master workman is nearly past and we have in his stead the man who is skilled only in a few of the operations necessary to produce a finished ar-



To you who dictate letters

Call up "The Dictaphone" and say—

"Show me how the Dictaphone will save my time; how it will make dictation a pleasure by enabling me to dictate at any time—at any place—and at any speed.

"Show me how the Dictaphone will do away with the annoying waits and interruptions of my present system.

"Show me how the Dictaphone will enable my stenographer to turn out at least 50% more letters with the same amount of work.

"And show me without any obligations on my part."

If you don't find that name in your telephone book, write to

THE DICTAPHONE

(REGISTERED)

Suite 1608, Woolworth Building, New York
(Columbia Graphophone Company, Sole Distributors)

Stores in the Principal Cities. Dealers Everywhere

Approved by the Underwriters. Official dictating machine of the Panama Pacific International Exposition

"Your Day's Work"—a book we should like to send you



ticle. He is expected to continuously repeat the same motions in performing an operation upon a piece of work, the name and use of which is often as meaningless to him as the letters of the Greek alphabet.

A repetition of motions tends to paralyze all ambition, and make the hours of labor hang heavily on the workman's hands. His mind, finding here no outlet for its activities, seeks other channels and the man becomes a machine, similar to the one he operates, with the added ability only of keeping one eye on the boss and the other on the clock.

If employers as a class could be made to realize how uninteresting and irksome much of their work is to the man in the shop, they would have found one of the causes of the slow man. If the work is uninteresting to the man, then something is wrong, either with the job or the man, and no amount of juggling time with the stop watch by the rate setter is going to remedy the difficulty. Reading rooms and athletic sports, encouraged by some, will only aggravate a case of this kind, as the man returns to his job with even greater distaste because of the few minutes' glimpse of pleasanter things.

Some few employers are attempting to get away from this condition by setting up assembled samples of their product in their shop for their employes to examine and operate at moments of leisure before starting work in the morning and during the noon hour. This has proved quite a stimulus in many instances, as the man comes to realize that he is really producing something practical.

Bits of interesting information concerning various jobs in the process of manufacture; peculiar conditions under which the order was secured; what foreign country it is going to be sent to; how the idea originated, and other things of like interest, pleasing to know, are posted by some employer.

If a certain article upon which a man is working is to be used personally by the President of the United States or the King of England, it will usually do no harm to let it be known to the men, and will serve to stimulate their interest. The same things that make the heads of a business enthusiastic and untiring in their efforts, will give the men the same spirit, and from the president down to the merest apprentice there will be the same ambitious interest, which will surely make for greater output in a given time.

**Sears,
Roebuck
and Co's
Greatest
Triumph**

**HARRIS
VISIBLE
Typewriter**

\$39⁸⁰

**SOLD ON
30 DAYS
TRIAL**



THE Harris Visible Typewriter is sold on 30 days' trial. It must give you satisfaction in every particular or we expect you to return it at our expense.

The Harris is standard in size and shape, has every feature that makes for neat, rapid, efficient type-writing. Write today for Special Typewriter Catalog No. 78E97, with liberal cash and time payment offers.

**Sears, Roebuck and Co.
Chicago**



ADS *and* SALES

Department Editor, E. ST. ELMO LEWIS
Advertising Manager, Burroughs Adding Machine Co., Detroit, Mich

Improved methods of salesmanship and advertising under efficient management

CREATIVE SALESMANSHIP

THE purpose of business and of living is not that of making money only, but of making happier people. Business itself is beginning to realize this. We are stopping in the breathless rush to make money—we are endeavoring to find to what profitable uses we can put money as we make it. We are beginning to realize that business exists for society—for the community, and not the community for business. We are beginning to realize that a store does not exist for the purpose of trapping so many human beings into its front door and then having the proprietors, with more or less skill, relieve the victims of the amount of money they have in their pockets.

We are beginning to realize in other words that service is more than lip-service; it is more than a name merely; that it stands for a reality. It is not something that can be bought and bartered; it can only be given. You can't pay for service; you can't sell it, because it is an attitude of mind and heart back of a real ability to help.

Creative salesmanship, therefore, is a term not alone for the effort which creates business for the house, but stands for creating a state of satisfied mind of the public, and for the purpose of creating prestige in the minds of your customers. Creating satisfaction in the minds of those who buy; creating values for the article that you handle and making people believe in that article; creating, upon the part of your house, a definite realization that that house has a duty to perform to the customers that you handle—all this is a part of creative salesmanship.

Salesmen should assume a more professional attitude toward the selling of goods. They should understand that a part of their honor, their pride, prestige and manhood is involved in every article they sell and every deal they make.

GRADY WANTS YOUR CONFIDENCE

J. E. Grady, of Chicago, is working a gigantic confidence game, and when he gets the confidence of every fellow who reads this ad he's going to keep that confidence because every fellow will say that Grady delivered the goods.



**ABSOLUTELY
FREE SET OF
GRADY'S
V A C U U M
TYPEWRITER
CUSHIONS**

(that lessen typewriter noise and fatigue) will be sent prepaid to you if you send your request on your letter head or check the 100% postal for this page. No obligation to buy or return. Simply try them. No salesman will call. Grady will tell you how to use them, and will appreciate your opinion of their value.

"Now is the time."

J. E. GRADY CO.

38 S. State St. Chicago

Phone Randolph 4287





If it is a mean and contemptible thing that a man sells, then it is a mean and contemptible man that sells it. If your arguments are hokus pokus, you can no more escape the penalty for that than you can escape the penalty for picking a man's pockets. Salesmen of the highest type should be careful about selecting the house they are to represent as salesmanagers of the highest type are careful of the salesmen they select to represent their house.

The salesman who deals honestly with his goods and deals honestly with his customers, is performing a service for the house, and he is doing a great service for the community that trusts him. That salesman has created for himself, in the process of creating business for his house and satisfaction for his customers, an enviable position which neither time nor chance nor panic can ever take away from him. He is an asset to any house that he serves, because he is an asset to the community that he serves; because the people with whom he has done business trust him and have confidence in him. He is bound to take with him the good will, a prestige, a faith and confidence which make him doubly valuable to the house that gets him.

These are the characteristics of the "big" man—the man who works true to big principles. This would involve a change of point-of-view on the part of some salesmen—some salesmen who have been financially successful.

We know a salesman, for instance, who, for the past five years, has been with one house. In that five years he has been in four different territories and in each territory he has produced a lot of business. But he has left every one of those territories poorer for his having been there. The prestige of the house has suffered; his own prestige has suffered; the service of the house has brought smiles to the lips of hundreds and yet that house, through a mistaken appreciation of dollars and cents in hand, has permitted that salesman to deliberately spoil those territories, and that house is reaping the ill-effects of that policy. Because the house can't see this result on its own balance sheet, it says that it is not there. Some day it will awaken to a true realization of what this policy has cost.

When dwelling upon the question of the social economic part of creative salesmanship, we deal in some-

Save Postage Cost

UNDER the *New Parcel Post* Ruling on Catalogs, those weighing over eight ounces must be mailed *Parcel Post* and *Zone Routed*.

¶ If you wish to send your catalog by Third Class Mail (two ounces for a cent), we can help you *reduce your postage*.

¶ We are familiar with the printing of half-tones on light-weight opaque English finish papers.

¶ Send specifications and let us make up dummies and send you printed samples

*The Reporter Press
of Chicago* Congress, Throop
and Harrison Sts.

TELEPHONES MONROE 4046



thing that sounds very important and somewhat high-brow. We never pick a quarrel with brains in business—we can't have too much brains in business. We do object, of course, to a man who is merely a thinking machine, because some men do not think right.

We don't object to a man making suggestions; we don't object to a man making changes. On the contrary we should be hospitable to both, but the changes should be put to the acid test of "What's the use?"

This leads us to the questions: What is scientific management? What is efficiency? It is the application of all scientific knowledge to the problem of eliminating waste. The elimination of waste is one of the duties that man owes to society and that waste may be the waste of man as well as of machinery; it may be the waste of noble feelings as well as of money; it may be the waste of health as well as of wealth. In other words it is no gain to society if an industry makes a thousand tuberculosis patients in cleaning up a million dollars for its proprietor. It is no gain of salesmanship if you sell a thousand dollars worth of shoes that are half paper.

If you test that by financial profit it may be creative salesmanship, but if you test it with honor and high ideals, you have done an ignoble thing. You are a failure and the world were better without you. We believe that the time is rapidly coming when the world is going to say to such men: "You shall be eliminated, without fear, without prejudice and without pity."

* * *

Before the wholesale division of the Board of Commerce, Detroit, Melville W. Mix, president of the Dodge Manufacturing Co., Mishawaka, Ind., recently spoke on "The Relation and Cooperation Between the Sales Department and the Company."

In his talk Mr. Mix emphasized the need of close cooperation between all departments of organization.

Other recent speakers before the Detroit Board of Commerce were Harry O. Tipper, former sales and advertising manager of the Texas Co., New York; Walter Dill Scott, professor of psychology, Northwestern University, Chicago, and George J. Cowan, editor of the Window Trimming department of the Dry Goods Reporter.

Buckley, Dement & Co., of Chicago

whose reputation for turning out Form Letters of highest quality has won for them a leading position among the letter concerns of the country, use and heartily recommend

The Multicolor Press



They state:

"We regard the Multicolor Press as the ideal machine for office printing and letter work. The firm that is particular — who appreciates good taste in form letters—will find in this press all the features that combine to produce excellent letters."

No make-ready necessary—we use a rubber platen. No curved plates needed—we use standard type and cuts throughout. Saves its cost on office printing alone, record forms, bills, etc., three colors at one impression. Check postal for samples and catalog.

Lisenby Manufacturing Co., Fresno, Cal.

Chicago Branch, ATLAS IRON & STEEL CO.
332 S. Michigan Ave. Harrison 6910



METHODS

Department Editor, WILLIAM F. SMITH
Efficiency Man, Marshall Field & Co., Chicago

New ideas, systems and devices applicable to office and factory.

FOLLOW-UP SYSTEM

A SIMPLE method of following and checking up rules, promises, etc., involves the use of an envelope with the top and one side cut open, a card for insertion and a "tickler" box. The desired information is typewritten in duplicate on the card and on the envelope. Both are filed away under the date or hour of the day when scheduled for disposal. It is an easy matter for the manager's secretary or stenographer to take care of this file.

As these records come into play the envelope and the card are removed from the file, and the card sent to the individual whose action it awaits. The envelope, which contains the duplicate information, is held at the desk of the secretary or stenographer until the card is returned with the proper notations.

If no further "tickler" is required, card and envelope are destroyed. Otherwise they are filed again under the extended date. This system can be used to follow up promises on orders, shipments, or for any other similar purpose. It will keep the manager in close touch with all matters requiring prompt attention, and fits in well with the house or plant intermail system.

* * *

Intermail System—Messenger boys should have regular routes throughout the plant. They should be provided with route cards, showing each consecutive stop where they will secure the signature of the foreman, together with his notation of the time, provided that no time stamps are available. Messenger or mail boys, whose routes take them to distant points, should be provided with bicycles or given an allowance for the use of their own.

* * *

Departmental Correspondence—A great saver of the manila envelopes ordinarily used is the open end envelope, 5x8¾, of 150 pound jute. These envelopes have sev-

30,000 copies, and more, per day of reduplicated typewriting—all printed from one or several original typewritten copies on *Dermatype*—can be produced on the New Model No. 78 *Edison Rotary Mimeograph* here illustrated.

*Greatest Quantity
Best Quality
Lowest Cost
Real Efficiency
Best Satisfaction*



The No. 78 with
Motor Equipment

Let us
prove this
to you.

A thorough investigation is invited which does not carry obligations to buy.

*Specially
Adapted for*

Circular Letters
Instructions
Price Sheets
Bulletins
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Requisitions
Stock Sheets
Work Slips
Office Forms
Etc., etc.

MADE ONLY BY

A. B. Dick Company

730-738 West Jackson Boulevard

CHICAGO



eral $\frac{3}{8}$ -inch holes punched through both sides so that contents cannot be overlooked. The envelopes are ruled or spaced on both sides for the insertion of names, and can be used as many as fifty or sixty times.

* * *

Letter Copying—Use manila tissue for carbon copies instead of white second sheets, pinning them to letter answered for filing purposes. An original letter is much clearer and makes a neater appearance when not copied by wet processes.

* * *

Telephone Calls—To save time and unnecessary questioning, the party called should always answer a telephone call with the firm or individual name such as "this is the John Jones Co.," or "John Brown talking." Where a plant has a switchboard operator, the firm name should be given by the operator, which saves just that much time of the department individual called.

* * *

Circular Folder—The Central Y. M. C. A. of Chicago has inaugurated the use of a combination circular folder, post card and 3x5 record card. This folder is nine inches wide and eleven inches long over all and is folded in three parts. The third part is cut in from the edges, so that it leaves within the folder a card 3x5 inches. In the top part appears a five inch slit which allows the card to be inserted when the circular is folded.

The outside of the card gives the name and the address of the party to whom sent, and the under side bears the return address of the mailer. For further information the card is merely torn off and posted. No further writing is required, and the firm mailing the circular has a permanent 3x5 record.

* * *

Rest Periods—The offices of the Loose-Wiles Biscuit Co., Kansas City, contains a large accounting room where many clerks are employed. At 3:30 o'clock each afternoon a bell is sounded, and each employe is expected to leave his or her work for five minutes and exercise. During that period the windows are thrown open and the offices filled with fresh air. This plan has prevailed for some time, and the results have been of great value.

6,000 Folds an Hour

Just think what that means towards getting out your statements, invoices and other small folding on time. No more worry about hand-folding delays and expense. This reliable little machine can be operated by inexperienced office help and increases the efficiency of any mailing department.

The machine is especially designed to meet the needs of small work. It stands on desk or table, and can be put away when not in use. Single, legal or accordion, and double parallel folds can be made. Change from one to another can be made in a minute. Handles paper ranging in size from $2\frac{1}{2} \times 4$ to $6\frac{1}{2} \times 13$ in., and holds 300 sheets of 20-lb paper.

Check the enclosed post card. It will bring you full information about the *Multigraph Folder, Junior*, and other labor, time and money-saving machines.

The American Multigraph Sales Co.
1799 East 40th Street Cleveland, Ohio

Price
\$75

Driven by hand.
Supplied with
motor, belt and
pulleys for elec-
tric drive at ex-
tra cost.



The Multigraph Folder, Junior



ARTIFICIAL BRAINS

Department Editor, F. F. MAIN
Inventor, Chicago

It is a disgrace for a human being to do what a machine may do as well or better.

MECHANICAL BOOKKEEPING

MECHANICAL bookkeeping is beginning to receive some of the consideration that it deserves, and this greater degree of interest comes from the fact that those who have honestly tried to cut expenses in this work have made such success as to compel attention. On the other hand, the great increase in the volume of business in the immediate past has taxed the space and facilities of many firms with the same results as that found in other work where it became evident that machinery must help out.

The accounting department is merely one of the factory departments. Its work is to manufacture records.

There are two considerations in the keeping of records: How much of the present work must be done, and how much is it possible to do with machines? Experience in developing several methods of machine work leads to the conclusion that very much of the usual hand work is unnecessary, and that the machine's greatest obstacle is the manager's reluctance to eliminate the time honored customs; or, perchance, those in supreme authority make arbitrary demands which prevent the introduction of better methods.

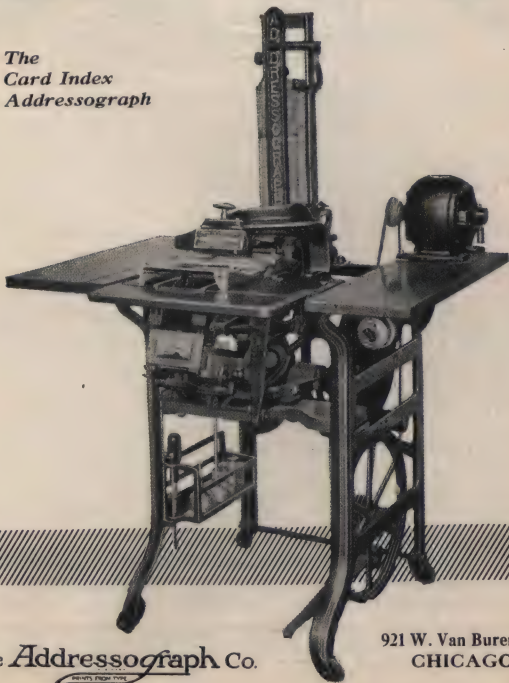
With such machines as are now on the market, there is less flexibility in record making than in the manual method of our fathers who developed the cumbrous methods of their time without the opportunity of securing relief from machines. Because of this lack of flexibility the machine has been kept out in spite of the fact that the very lack of flexibility brings greater uniformity to the work, and in this way increases both the quality and the quantity of the product.

We propose going over the present records with the manager to determine the minimum record that will suffice. It usually appears that much of the work is of such doubtful necessity that a trial or "dummy" set may be

TEN REASONS WHY YOU SHOULD INSTALL AN ADDRESSOGRAPH SYSTEM

1. Operator—your inexperienced office boy.
2. Speed—a complete address per second.
3. Quality of address—facsimile of the best type-writing.
4. Cost of address—less than 10c per thousand.
5. Efficiency—has all the features of a modern card index.
6. Accuracy—each address is accurate to the letter.
7. Eliminates necessity of checking and rechecking duplicate or triplicate forms.
8. No wasted postage from misdirected mail matter.
9. Customers and prospects can be automatically followed up.
10. Depreciation—practically nothing.

*The
Card Index
Addressograph*



The Addressograph Co.

921 W. Van Buren St.
CHICAGO



run for a brief time with the machine and its practicality proven.

Even those who never write a business letter in long hand have become so accustomed to the typewriter that the signature validates the whole letter, but when it comes to their own records there is a hallowedness about "long hand" that makes machine work sacrilegious and of doubtful legality.

The officers of several of our largest banks have raised these questions, especially in case the bank records were required as evidence in court. The possibility of locating the responsibility by identification of the particular bookkeeper as shown by the penmanship was magnified as of so much importance that it seemed a hopeless task to secure machine work.

One of these chief clerks was called into court with the bank ledger, and swore not only to the account, but to the particular bookkeeper as shown by the penmanship, but the opposing attorney showed that the particular entries under investigation were in another handwriting, and investigation proved that the bookkeeper was sick on that particular day and that this work was done by a substitute.

With the machine work the court accepts the regular ledger as produced in the regular work of the bank. It took special laws to sanction the use of machines for recording deeds and other legal matters, and the Fisher and Elliott-Fisher, who promoted the work, deserve great credit for the success of their campaign.

Legal objections are now much less formidable, and machines are becoming so developed that they more nearly fill the requirements, so that we look for more rapid introduction of machine work from now on. Machines still lack much that is needed, but with the recognition now attained, machine promoters have so much of promise that development should be rapid.

It is our purpose to take up definite examples of such work to show that it is a "give and take" matter in which the manager must accept the different form and the machine must be adapted and developed. We recognize that a number of companies feel that they have solved the problem. We are willing to admit that there may be many solutions, and that many may be required to meet all conditions, so at the outset we wish it understood that we are "playing no favorites."



A New Use for Your Typewriter

With the same typewriter you now have and without changing it in any way, your stenographer can cut 1,000 Belknap stencils in one day.

In HALF AN HOUR your office boy with these stencils can address as many envelopes, circulars, statements, etc., as would take your stenographer an entire day, and the work produced will be an exact reproduction of typewriting because the stencils were cut on a real typewriter.

The stencils are inexpensive and guaranteed to last as long as you have need to use them.

The addressing machines range in price from \$50.00 up.

NOW you can afford to push your direct advertising and follow-up list because you can address it at the rate of 2,000 to 14,000 per hour just exactly as though each piece had been personally addressed on a typewriter and taken ten to fifty times as long.

DON'T let the cumbersome, expensive features of the addressing systems you may have had or investigated stand in the way of your thorough investigation of the typewriter stencil system. This is something entirely different and has been adopted by hundreds of representative concerns.

Send for YOUR copy of our new catalog NOW

Rapid Addressing Machine Company
374 Broadway New York City



HEALTH

Department Editor, DR. A. M. HARVEY
Chief Physician and Surgeon, Crane Co., Chicago

Looking after the health of all employees; value of maintaining a health division.

PHYSICAL EXAMINATION

A GOOD example of what the physical examination of employes will accomplish, is offered by the Avery Company, of Peoria, Ill., where such work has been carried on for the past two years as one phase of the system of medical supervision. At the end of the two years, Dr. C. G. Farnum, chief surgeon, says that "the experience it has brought us has convinced us that it is eminently satisfactory and mutually advantageous to both employer and employe."

Commenting further on the advantages of physical examination, Dr. Farnum says:

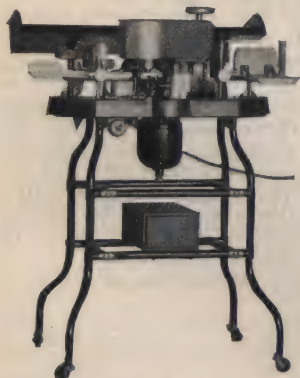
"One of the first advantages observed was the intimacy developed between the men and those in authority, for, if anything is wrong with a man he is asked to report to the dispensary time after time and is thus kept closely under observation.

"There is a great deal more to the safety problem than physically perfect men and modern safety devices. There is the mental side that must be considered, and at the Avery Company we have done a great deal of work on what we choose to call the psychology of accident prevention. The intimacy that makes this most effective, and makes our work of educating the men most easy, begins at the time of the physical examination.

"Then there is the question of fitting the man to his job. The object of our physical examination is not to develop a working force of physically perfect specimens. We are not running an athletic club nor a turnverein. We want safety and efficiency, and our data shows that reliability is a large factor in both of these. It likewise shows that there is no distinct relation between the physical perfection and reliability. So, if a man with one leg is perfectly safe at a given job, his physical defect is not permitted to keep him out of it.

"This brings up the matter of necessary co-operation

What is the Cost of Sealing and Stamping Your Mail?



Do you get the use of every stamp you buy?

What is the cost of checking your Postage Account?

These are pertinent questions, and of vital interest to any employer. Can you answer them? If you can't, it will pay you to investigate.

Then ask us for comparative operating-costs.

Make Your Mailing Department Efficient, Reliable, Economical

The Mail-Om-Eter is efficient because it—

Seals, stamps and counts 250 letters per minute, and does it better than any human agency can possibly do it.

The Mail-Om-Eter is reliable because—

Stamps are securely locked during operation, insuring you "value received," and removing temptation from employees.

The Mail-Om-Eter is economical because—

It will save you many times its cost.

*Ask Users Throughout the United States
Check Postal for Catalogue*

Mail-Om-Eter Company

Telephone Randolph 1673

426-428 New York Life Bldg.

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of the surgical department with the employment department and the department of safety inspection. The conferences between the heads of these departments are innumerable. Innumerable, also, are the instances where a man is shifted from one job to another or is given a different job from the one he applied for.

"Again, our system helps to eliminate undesirable applicants. The very fact that we require a physical examination spares us many of these, and the examination weeds out some more. We contend that the men who are already in our employ deserve the most effective protection that we can give them from diseased as well as defective fellow workmen. But the object of physical examination is not merely the weeding out of men. The object is to put men where they are safe, and men are eliminated only when no place of safety can be found for them.

"Another advantage is the protection that our elaborate records give us against dishonest claims for compensation. With a carefully kept series of records of a man's condition, not only at the time of his accident, during the period of his disability and subsequent to it, but also a complete record at the time of his first examination as well as the subsequent examinations that are made, one can keep many of these claims somewhere near the bounds of honesty.

"Again, there are very few things that can be more advantageous to the workman than a frank opinion as to his physical defects or diseased conditions. Most of these that we discover are in their incipient stage, where much can be done for them, and most of them are utterly unsuspected. These men are referred to their family physician and are also kept constantly under supervision and observation at the dispensary.

"The physical examination of employes as a part of our general system of medical supervision of employes is, we believe, an unqualified success. We know that it has improved the general personnel of the working force; we know that it has been a big factor in the reduction of accidents; we know that it has exerted a strong influence toward a better feeling among the men, and we know, also, that it has contributed greatly toward increased efficiency."



The Proof of Filing is in Finding

Every letter can be found when wanted by using the "Y and E" Direct Name System. It keeps a numerical check upon your alphabetical filing. The human eye can grasp a number quicker than an alphabetical subdivision. Therefore you cannot get one number nine in with the number eight without seeing it at once.

This produces the maximum speed in filing and finding and promotes highest efficiency.

You file by number and find by name.

Check page 83 and we will gladly send you booklet No. 2243 which describes this system in detail.

YAWMAN AND ERBE MFG. CO.

589 St. Paul St.

Rochester, N. Y.

"Leaders of the World" in Filing Devices and Office Systems



EDUCATION

Department Editor, PROF. LEON C. MARSHALL

Dean of the Dept. of Commerce and Administration, University of Chicago, Chicago.

*Education for business; what training is necessary
for the best interests of men and business.*

VALUE OF COLLEGE EDUCATION

A FEW months ago. Howard Elting, then president of the Chicago Association of Commerce, addressed a questionnaire to a number of the large employers of labor in the Middle West, asking their opinions concerning the merits and demerits of a college education as a preparation for business. In this questionnaire the college graduate was taken to be a man who had graduated from the ordinary academic or scientific college rather than from the college of business administration. In general these replies from prominent and successful men in different walks of life indicated that the college graduate should have a tremendous advantage over the non-graduate, provided he realized that certain fundamentals must be taken into consideration, aside from things which may be learned in books. Mr. Elting's summary of the replies to his questionnaire is as follows:

"It seems to be the judgment of the business world that among applicants for employment from our colleges there appear the following negative traits of character:

- "1. Impatience to succeed.
- "2. Lacking in persistence.
- "3. Tendency to snobbishness.
- "4. Lacking in industry.
- "5. Lacking in thrift.
- "6. Lacking in technical training (has more than old college type).

"7. Lacking in appreciation of time.

"8. Easily discouraged.

"Upon the other hand, it is most encouraging to note from these judges of employes that the college graduate has:

- "1. More concentration.
- "2. Knows where and how to look for information.
- "3. Reasons from one step to another.
- "4. Is more adaptable.
- "5. Is more conscientious.

Increase Your Personal Efficiency—



and
that of
your
other
execu-
tives
with
the
**UNI-
FILE**

It is simple, inexpensive, durable and a great time-saver. No key or index to refer to before finding the place in which correspondence is filed—you find the unit you want *by sight INSTANTLY* when you use the

TRADE **UNIFILE** MARK

Whether your business is big or little—whether you have 5 or 1,000 letters a day—the *Unifile* will *simplify* and *save time*, *save money* and *save space* in your filing department. It costs less than ordinary equipment and you can start with as little as you need—for it *grows* to meet your requirements. It *eliminates transfer troubles*. As the units fill up they are put away in convenient storage—*without touching a paper*—and replaced by new units at a trifling cost. Check postal for catalog.

UNIFILE MANUFACTURING COMPANY
14 North Dearborn Street Chicago, U. S. A.



"6. Has keener appreciation of the duties of life and its responsibilities.

"7. Is able to solve more difficult problems.

"8. Has higher ethical and moral standards.

"9. Has larger view of life.

"My trial balance would be the new college boy is adaptable to the place he seeks and his problem of adjustment is on the way to solution."

One of the typical replies to the questionnaire came from the president of a railroad, and is as follows:

"It seems to me obvious that one cannot make an absolute statement that college men are better than non-college men, or that the reverse is true. Generalizations are dangerous. I regard college experience as like a little world which gives a man a good many of the same sort of experiences that he will meet in the real or big world. In the colleges that I know most about he will find all sorts and conditions of men, not only in respect to wealth, but also attitude of mind, morality, etc. If a man is weak he is liable to be swept away by temptation; but it is at least a question whether this man, going into the world without this experience, would have been safe.

"It is generally conceded that college education means a good deal more today than what is learned out of books. If schools and colleges do not prepare boys and girls for life, they are a failure. To my mind, the most important things that a college can teach are methods of work and ideals. If men are going to be judged simply on the basis of accomplishment, regardless of the methods they employ, I presume one hundred men, taken at random, without a college education will show up quite as well as one hundred men taken at random who have. Any man of experience knows that there are always opportunities to 'cut corners' and to reach the goal you are striving for without strictly adhering to the rules of the game. Some men think that if the umpire is not looking it is all right to do this; and I do not pretend to claim that the college men are wholly above reproach; but I do believe that as a rule their ethical and moral standards are higher.

"When it comes to scientific work or technical work of any kind a college man has a tremendous advantage over one who has not had the advantage of a college education. Even if a man knows absolutely nothing about

A School on a Farm

where boys learn by doing. Actual contact—under competent instruction—with the tilling of the soil, growing and harvesting of crops on a 670 acre farm. As the seasons change, every day brings new and real experience. Put the whole boy to work where he will get the “how” as well as the “why.” Shops, work with tools and animals, deep woods, a beautiful lake, tramps, boating, bathing, sports, right associates, with an exceptional school and camp equipment—just the thing the city boy most needs—vigorous, healthful, out-of-door life in the sunshine. The Summer Camp Session opens June 15th. Get catalog and particulars by checking the postal for page 87, or direct from

The Interlaken School



EDWARD A. RUMELY

President

Rolling Prairie, Indiana



the subject he is investigating, but from having absorbed the correct method of undertaking any scientific investigation he goes to work at the new problem to learn the facts, and will not try to form conclusions until he has considered all the facts. The method too often followed by the man who has not had the advantage of training in scientific methods is to select those facts which prove what he desires to show or reinforce a preconceived notion."

This same man answered the questions as follows:

1. How does he excel?

If at all, he excels through greater knowledge of life.

2. In what does he lack?

I do not think any general statement would fit the case.

3. If he has moral stamina, does he eventually advance the standards and efficiency of your business?

I think he does.

4. Is he desired as a new employe, or are you indifferent to his coming?

It is an old saying that "You can't make a silk purse out of a sow's ear." The desirability of a man depends even more on his personality than on the training he has had.

5. Does his academic training need only the technical training of your road to make him the new business man?

I would rather have a broadly educated man, unfamiliar with technique of any trade or business, than to have a man who had simply the technique without the foundation. Of course, in some lines (engineering, for instance) it is absolutely necessary to have the technical knowledge; but a man who has a technical training without a broad foundation doesn't get very far unless he has sufficient persistence and ambition to educate himself in the great university of life.

6. Is his spirit towards his job right?

This depends largely on the character of the man. It is quite the fashion to make jokes about the college men being vain or conceited about their knowledge of things, but it is not my experience with them as a class. Of course, individuals may have these faults, and nothing will eradicate them. But school and college is as likely to eradicate this sort of vanity as any experience.

If Your Advertising *is Effective*

When the magazine is high class editorially,

When 5000 live business executives read it monthly,

When its readers have the power to buy if convinced,

When the other advertising has pulling power and snap,

When the convenient little postal makes investigation easy,

When the reader knows he is protected by our guarantee,

Then it will pay you

to check postal for our advertising rates and proof of what we claim.

100%

72 West Adams Street
C H I C A G O



SAFETY FIRST

The organization necessary for safety work in an industrial concern; best methods of instructing the worker in the "safest way."

ORGANIZATION FOR SAFETY

THE accident prevention problem involves two essential elements—safeguarding and education, in each of which there is more or less detail work. Experience in the past decade has conclusively proven that safeguarding and educational work in any plant is not a "one man job;" that satisfactory results can only be secured through the highest measure of co-operation between the employer and his employes, and this only by means of organization. The employer himself must be vitally interested in the work if he expects to educate his men to share the responsibility with him. The men must be given a part to perform in it, if their interest is to be aroused and maintained.

The form and character of any organization must naturally vary as the work to be performed varies; hence the work to be done by a safety organization should first be considered before determining what the form of organization should be. Safeguarding and education comprises the task of any safety organization, all of which naturally requires efficient planning, direction and supervision.

In safeguarding there are involved among others the following essential elements: (1) A study of hazards incidental to the use of equipment and machinery; (2) adoption of standards; (3) inspection for (a) need of safeguards, (b) installation of safeguards, (c) maintenance of safeguards, (d) use of safeguards; (4) in new construction or replacement, checking in drafting room or purchasing department.

In educational work there are involved among others the following essential elements: (1) A study of hazards incidental to operations; (2) adoption of operating rules covering safe method of doing work; (3) instruction of new men as to hazards and rules; (4) interesting the men; (5) providing bulletin boards, in the several departments, for the posting of safety orders, rules and information.

Saniglas KING'S SAFETY GOGGLE



WINS conclusive test of large Steel Foundry near Chicago. One hundred blows of 26 gram hammer falling 24 inches did NOT crack Saniglas, while 24 blows from the same height cracked the nearest competitive glass even tho 13 per cent thicker.

WE WILL SEND YOU FREE

as many as you need of our booklets, "Talks to Workmen on Eye Protection," that ought to lessen your eye accidents. Write the number of copies desired in the checking square opposite page 91 on the 100% Post Card and the booklets will come forward prepaid, without cost to you.

JULIUS KING OPTICAL COMPANY

7 W. Madison St., CHICAGO

10-12 Maiden Lane, NEW YORK

Awarded Gold Medal Exposition of Safety and Sanitation
New York City, December 11-20, 1913



The existing working force of every industrial or transportation concern, whether large or small, is adaptable very readily to an accident prevention organization. No new employes are required unless it be in the case of very large concerns in which it might be necessary to select some person to devote himself exclusively to the inspection work.

In any form of organization created, the following elements are essential:

1. A safety inspector (who, in a small plant, may perform other duties). He should (a) inspect (1) for the need of safeguards, (2) for installation of safeguards, (3) for maintenance of safeguards, (4) for use of safeguards, (5) for unsafe practices, (6) for plant cleanliness; (b) have charge of details of all safety work; (c) receive all reports, recommendations and suggestions; (d) keep all necessary records.

2. A central committee of safety, composed of plant superintendent or his assistant (chairman) safety inspector (secretary), and three or more high grade department superintendents, foremen or workmen, which should (a) have general charge and supervision of safety work, (b) pass on all controverted matter, (c) gather all available information (d) establish standards for safeguards, (e) promulgate rules for safe operation, (f) outline educational campaign.

3. Workmen's committees, consisting of three to five workmen, appointed and changed periodically. They should (a) make inspections, (b) investigate accidents in their several departments, (c) render written reports on forms provided for that purpose.

4. Foremen—each foreman should (a) enforce safety rules adopted, (b) be held responsible for the safety of his men, (c) investigate accidents, reporting causes and suggestions for method of preventing recurrence on forms provided for that purpose, (d) make frequent inspections of his department, (e) render weekly written reports on forms provided for that purpose.

5. Meetings of foremen, held monthly, to discuss safety matters.

6. Workmen: Each workman should be educated and interested in safety matters. This work involves (a) instruction of new men, (b) familiarizing of men with rules, (c) interesting the men through bulletin boards, prizes, etc., (d) discipline.

No 5c Cake of Soap Could Serve 10 Men a Full Week

and yet the International Harvester Co.'s Deering Works using Antiseptol Liquid Soap find their average expense per basin, used by 10 men, was only eight-tenths of a cent per day, over an eight months' severe factory trial. Cake soap also cannot possibly give the sanitation that Antiseptol Liquid Soap Service gives.

We can show logical "reasons why."

Antiseptol Liquid Soap

eliminates all waste of ordinary cake soap. *Every drop of soap is used*—and every user receives a fresh, uncontaminated supply for every wash.

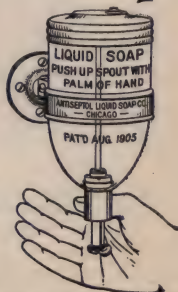
Its economy, its efficiency, its sanitary features, and the entire satisfaction it has given steady users of nine years' standing, should influence you to give Antiseptol

A 30-Day Trial

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Antiseptol Liquid Soap Co.
564 W. Randolph St. CHICAGO

*World's Largest Exclusive
Manufacturers of Liquid Soap*





EDITORIAL

What we believe to be so—a frank opinion on vital problems by the Editorial Board.

WE cannot sit idly by and with calm reserve contemplate some of the testimony that was recently offered to the members of the Federal Commission on Industrial Relations with reference to the status of the laborer under scientific management. Many of the most unfair arguments were propounded by men high up in labor circles, who display all too frequently either a vast amount of misinformation or a tendency to overlook the truth.

One witness in particular, N. T. Alifas, representing the machinists in the government service affiliated with the American Federation of Labor, testified to this effect: That organized labor is opposed to the stop watch, time studies and to the elimination of the man who cannot keep up with the intense pace set by efficiency systems.

In his book entitled "Primer of Scientific Management," Frank B. Gilbreth answered some such criticism in the following manner:

"While all kinds of management endeavor to discard the inferior workers, scientific management is the one plan that makes definite and systematic effort to promote each worker to the highest notch he is capable of in his chosen life work. It tries to place each worker where scientific investigation and analysis of his individual peculiarities indicate that he will be most efficient."

One of the first things that scientific management set out to do for the inefficient workman was to place him where instruction and general working conditions raised his efficiency to a point where he was an asset to the business in which he was employed, where his wages grew because of that increased efficiency, and where he would not become a burden upon society. Labor's pet belief seems to be that the burden of inefficiency falls on capital, where labor desires it to fall. It does not or will not see that it falls on society, which is the ultimate consumer.

A good point for labor to remember is this: That the

80%

Inter-Communicating

Astonishing, but it's a fact that 80% of the telephone calls in all large businesses are inter-communicating calls. The proportion varies, of course, but seldom falls below 65% and often rises close to 90%.

Does not this suggest to you the savings to be made with an inter-communicating system which requires no operator?

There is only one such system suitable for installations of over 10 telephones.

It is called the **Automatic-Phone**. It is used and recommended by such notable businesses as Sears, Roebuck & Co., Baldwin Locomotive Works, Standard Oil Co. of Ohio, National Tube Co. and **many** others. It is made by the Automatic Electric Company, Chicago. It is described comprehensively yet briefly in our booklet "**At Your Finger's End.**"

You can secure a copy of this booklet by simply checking the post card in this magazine and mailing it at once. Do so and we promise you some interesting facts on cutting the cost of that 80% of your telephone traffic which is Inter-Communicating.



AUTOMATIC ELECTRIC COMPANY
CHICAGO

Branches in Most Large Cities



workman is also a consumer, and as such is contributing in dollars and cents to inefficiency. When labor opposes the desire of scientific management to increase a workman's usefulness and prosperity, it stands in the way of its own demands and compels that workman to donate toward the support of an obstacle that could easily be disposed of through cooperation.

Fortunately, practice has destroyed many of the harmful effects of such preaching, and emphasized the virtues of scientific management. Nevertheless, we still have with us a few who continue to deny the truth and create false impressions through newspaper publicity.

* * *

The New York World does not make an unsound argument when it urges the interstate commerce commission to decide the request for higher freight rates first, and then make an effort to regulate administrative abuses that appear to be so common among railroads.

On the strength of the claim that the government should not stand in the way of business progress, and that the railroad freight rates can be reduced any time it is made evident that the railroads can get along with less, this seems to be a logical solution to the problem that is undeniably hurting trade. Furthermore, the answer is simplified by the fact that shippers are begging the chance to give railroads what they ask for.

In a short article copyrighted by the Abbott & Briggs Co., and published in the National Sunday Magazine, Judge E. H. Gary, chairman of the United States Steel Corporation, states that "business has had a ducking, but it is drying off and is ready and eager to take a fresh start. There is ground for optimism," he continues. "We have been more or less enveloped in clouds of doubt and hesitancy but I think we are now approaching the dawn of the greatest prosperity."

The safety work conducted by the Dodge Manufacturing Co., Mishawaka, Ind., is well set forth in an article written by M. W. Mix, president of that concern. Mr. Mix believes "thinking first" quite as necessary and good a slogan as "safety first." (5)

A Community of Interests

ADJACENT to and in connection with THE OFFICE EQUIPMENT MART we have provided for a series of small private offices, very suitable for Chicago branch managers. These small private offices rent for no more than ordinary office space in any desirable building, but tenants enjoy many advantages not usually to be had in connection with small spaces.

These spaces will be rented to high class manufacturers of office efficiency machines or devices only. Write for particulars now—the spaces won't last long.

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INDEX TO REFERENCES

(As indicated by the appended list, 100% is the executive's ready reference and digest for all worthy reading on efficient management. Numbers are used throughout the body of the magazine to save space. 100% may be depended upon to sort out the best there is appearing from month to month, and will refer only to those articles, that may be desirable for our readers to peruse further.)

1. Factory Organization and Administration, Diemer, McGraw-Hill Book Co., 239 W. 39th, N. Y., \$3.
2. System, 7 No. Wabash, Chicago, March, 20 cents.
3. Industrial Engineering, 120 W. 32nd, N. Y., March, 20 cents.
4. Business Education, Washington Square East, N. Y., March, 20 cents.
5. Safety Engineering, 80 Maiden Lane, N. Y., March, 25 cents.
6. Manufacturing News, 76 W. Monroe, Chicago, April 9, 10 cents.
10. Iron Age, 239 W. 39th, New York, May 7, 20c.
11. Factory, Chicago, May, 20c.
12. Business Philosopher, Area, Ill., April, 20c.

(Note to Publishers.—This magazine will review all the best articles and books dealing with efficient management, and requests that publishers submit all articles and books that they desire represented here.)

An original entrance examination for chief of the efficiency division, Chicago, will be held May 26. The position pays \$2,500 per year and upwards.

E. J. Roth, formerly assistant general storekeeper of the C. B. & Q., has been made supply agent for the Monon system with headquarters at Lafayette, Ind.

Howard B. Stone, editor of the department of Despatching of 100%, recently addressed the students of the Northwestern School of Commerce connected with Northwestern University, Evanston, Ill. Mr. Stone's subject was "Planning and Despatching."

Thomas M. Lothrop, member of the Western Efficiency Society, Chicago, was recently appointed Building Commissioner of Glencoe, Ill.

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INTERNAT'L EFFICIENCY SOC'Y CHICAGO

This guarantee mark appearing at the bottom of an advertisement in **100%** means:

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- 2nd. That he has guaranteed his goods to be free from defects in material and workmanship.
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Second Move in Two Months

The demand for Lothrop Service as Designers and Specialists in Steel Efficiency Equipment for Offices and Factories has again forced us to secure larger space. We will have ground floor display rooms of steel shelving, lockers, desks, cabinets, stools, etc., at

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Mew Brittain Machine Co.**

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